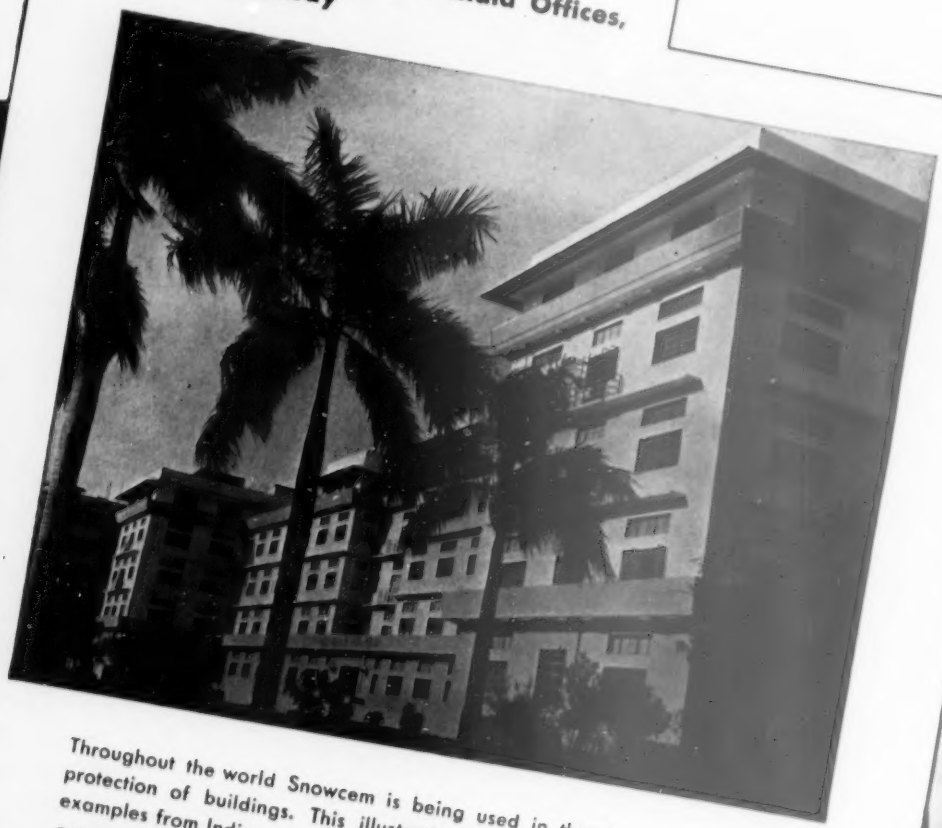
THE ARCHITECT & BUILDING NEWS

10 JUNE 1954 · VOL. 205 · NO. 23 · ONE SHILLING WEEKLY

- CONFERENCE DISCUSSION
- FOUR DWELLINGS SCHOOL, BIRMINGHAM
- CURRENT MEASURED RATES

Government of India Offices, Bombay



Throughout the world Snowcem is being used in the decoration and protection of buildings. This illustration is one of the many recent examples from India.

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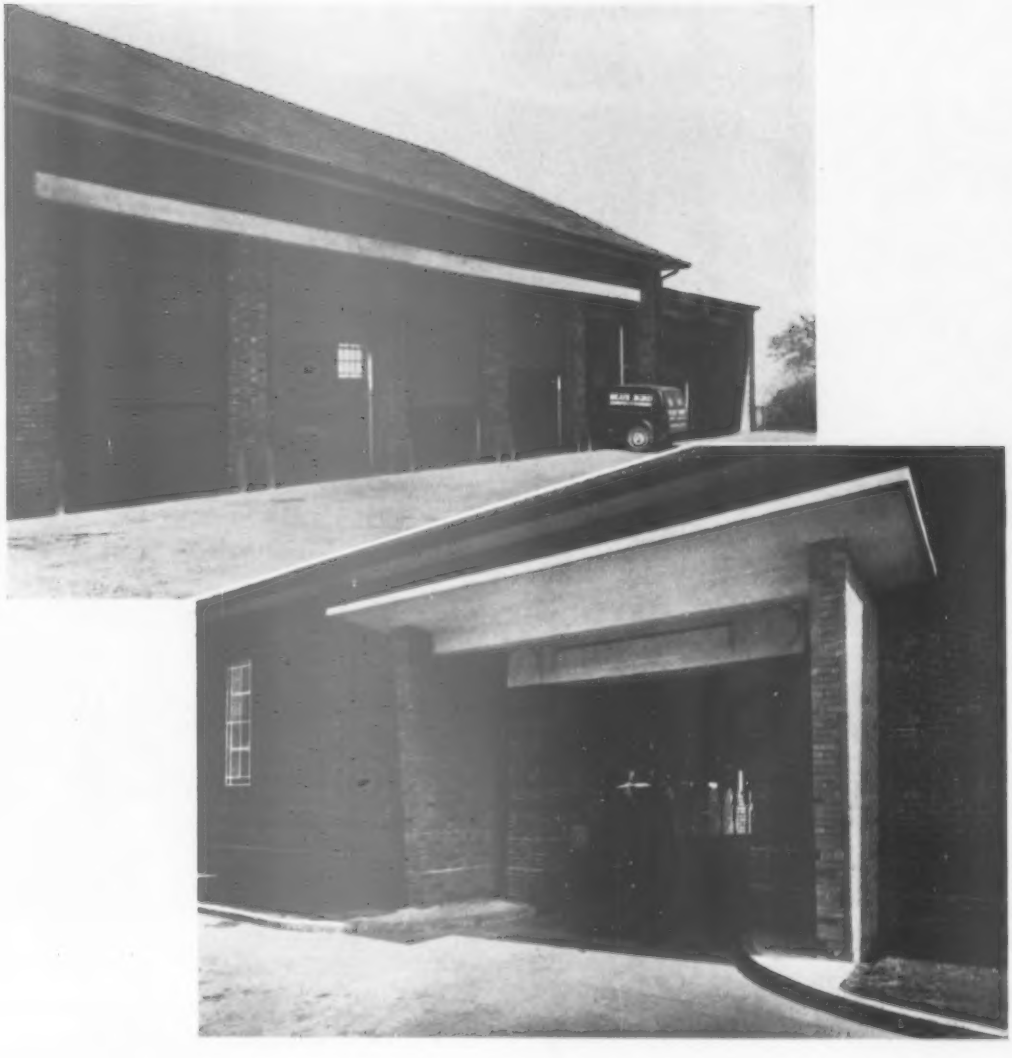
KINNEAR SHUTTERS



Architect: S. N. Cooke, Esq., Birmingham.

MESSRS. HARRY VINCENT, LTD., BLUE BIRD TOFFEE FACTORY, HUNNINGTON, WORCS.

The upper photograph illustrates Garage fitted with 7 Kinnear Shutters, while the lower picture is of one of the 6 Kinnear Shutters supplied for Main Factory. These 13 Shutters were erected to a series of five repeat orders between 1925 and 1935.

Sole Manufacturers:

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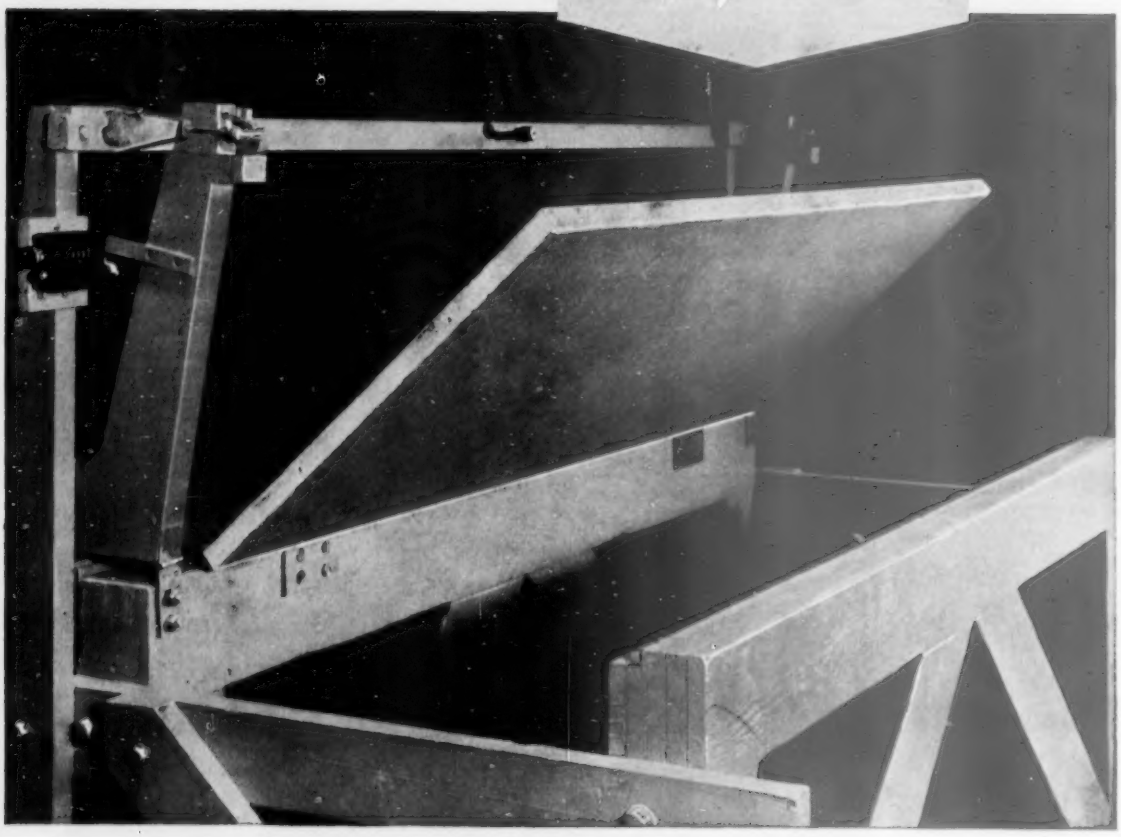
A

THIS DOOR WAS SLAMMED 41,455 TIMES



THERE is nothing special about the Gliksten flush door shown here on the testing machine at our factory . . . *except that it has been heartily slammed* 41,455 *times and still shows no sign of breakage, or deterioration.* The door was selected at random for this routine test. This is conclusive proof of the toughness, strength and durability of the stressed skin principle on which Gliksten flush doors are constructed.

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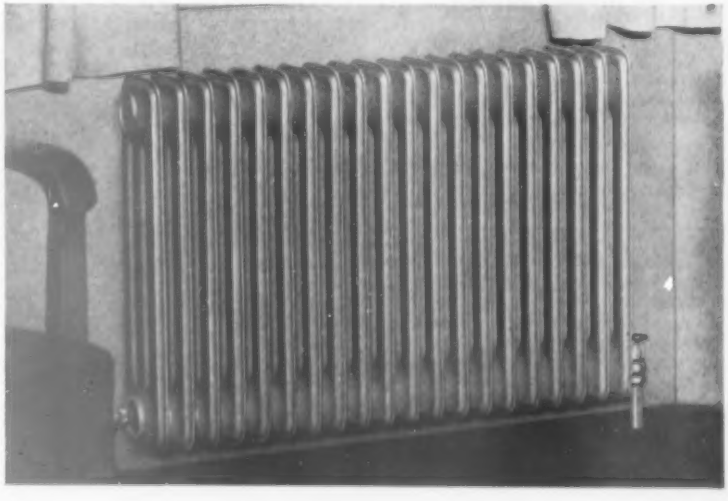

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A BUILT-IN INTEGRAL UNIT

"Rufflette" Brand Recessed Curtain Runway is an integral part of building construction. It is inexpensive and can be fitted into wood or plastered lintels. The runway is held rigidly in position by a patent spring clip without screws and is a concealed and permanent fitting.

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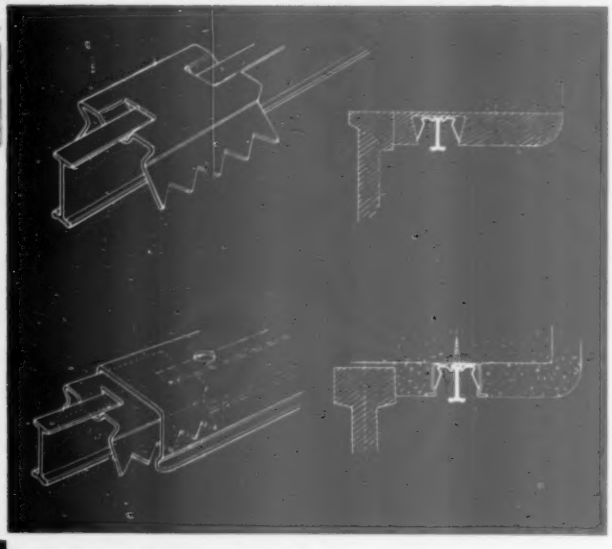
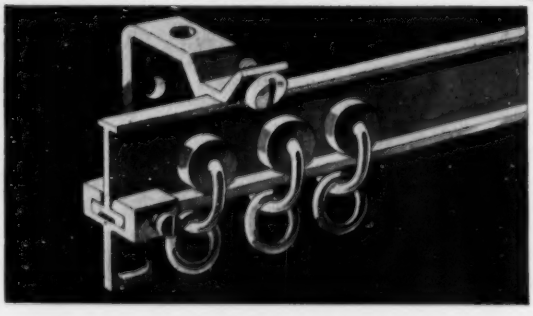


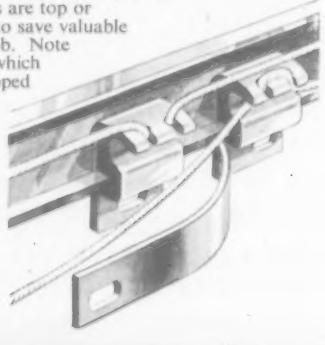


'Rufflette' BRAND B/L TYPE

This is a strong corded or non-corded "Rufflette" runway for all general purposes.

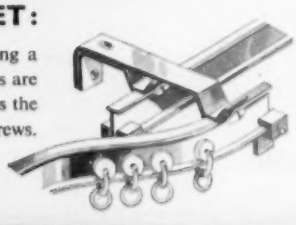
STRAIGHT RUN UNITS:

For straight runs curtains can be effortlessly opened or closed with this "Rufflette" cord-controlled runway with sliding overlap arm. Brackets are top or face fixing, and are designed to save valuable fitting time and cost on the job. Note the curved travelling section which enables curtains to be overlapped without cutting rail.



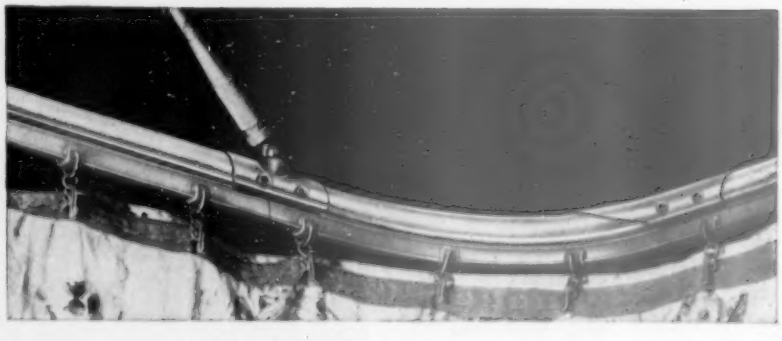
THE OVERLAP BRACKET:

The runway can be cut and overlapped in the centre using a special bracket to give ample overlap for curtains. Brackets are drilled for either top or face fixing. One screw only attaches the bracket to wall or ceiling—rails are held in position by two screws.



'Rufflette' BRAND CUBICLE RUNWAY

Designed for screening beds in hospitals, schools, clinics etc. No floor supports are used, suspension being from ceiling or wall. Silent runners make operation of curtains or screens almost inaudible.



'Rufflette' BRAND *Runways have been specified by the following councils.*

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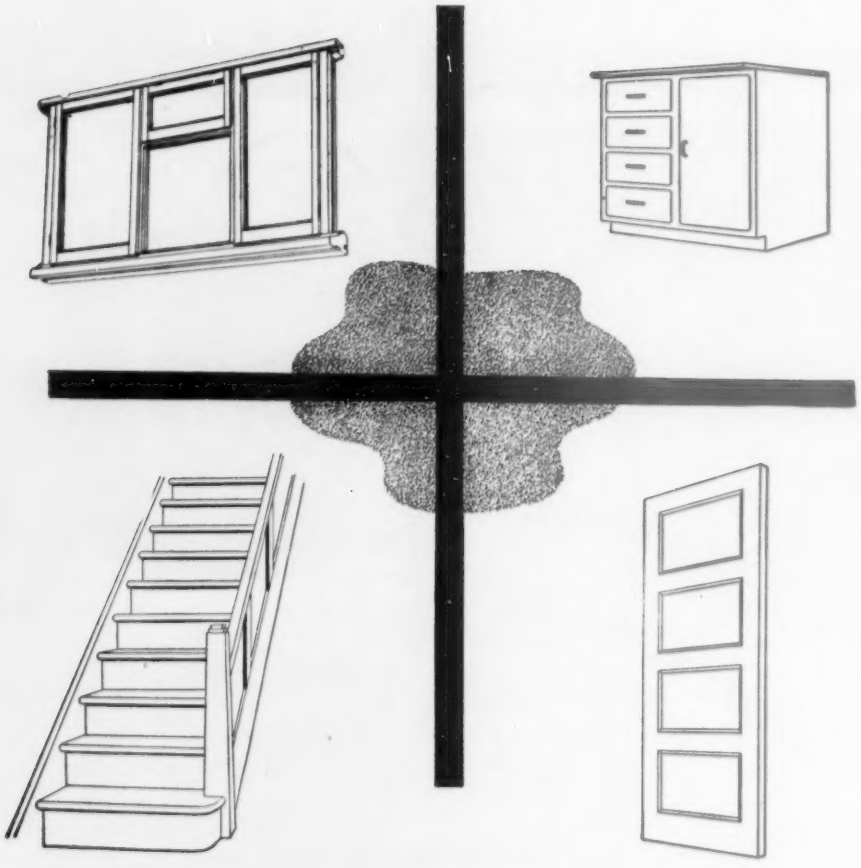

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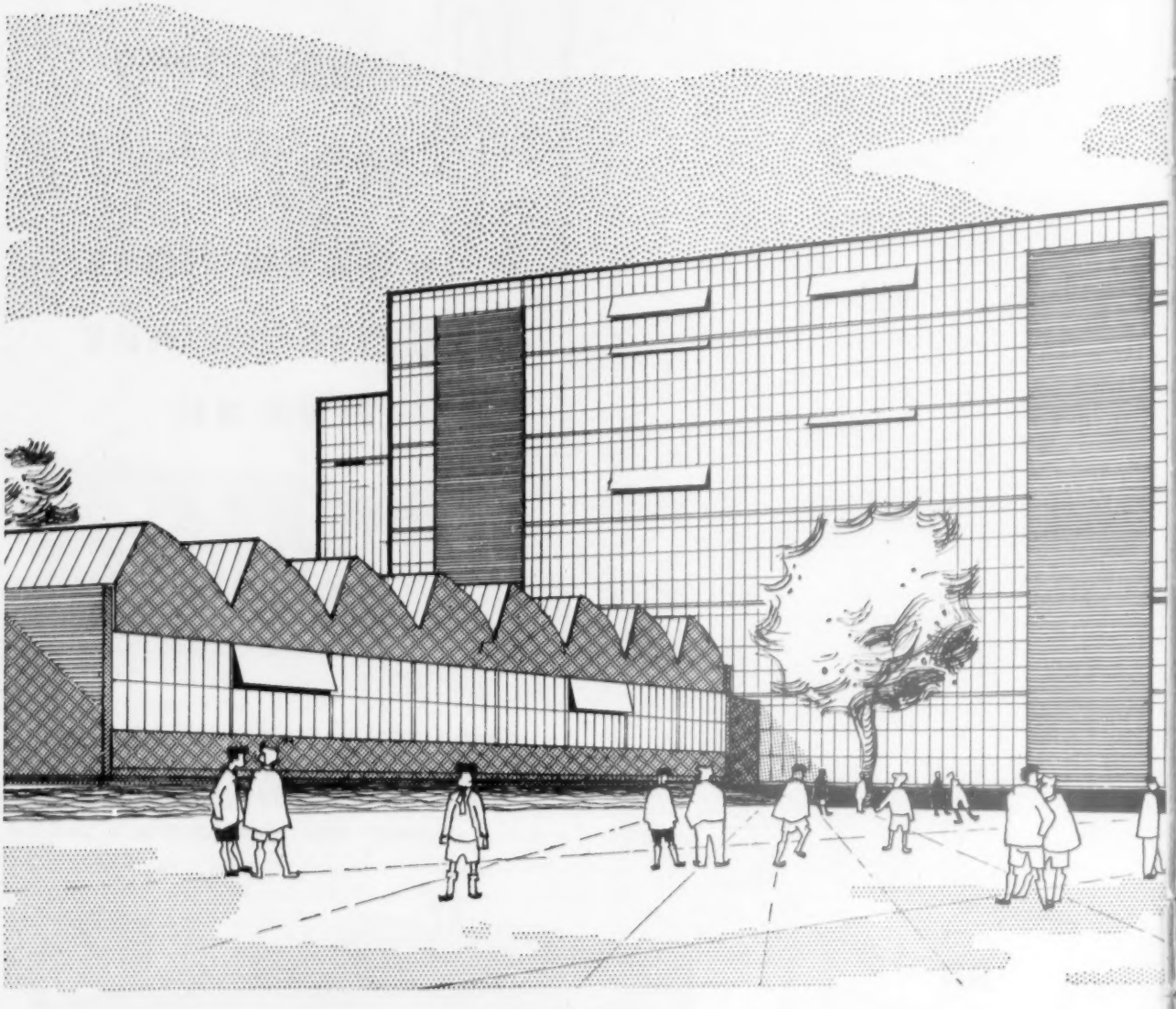
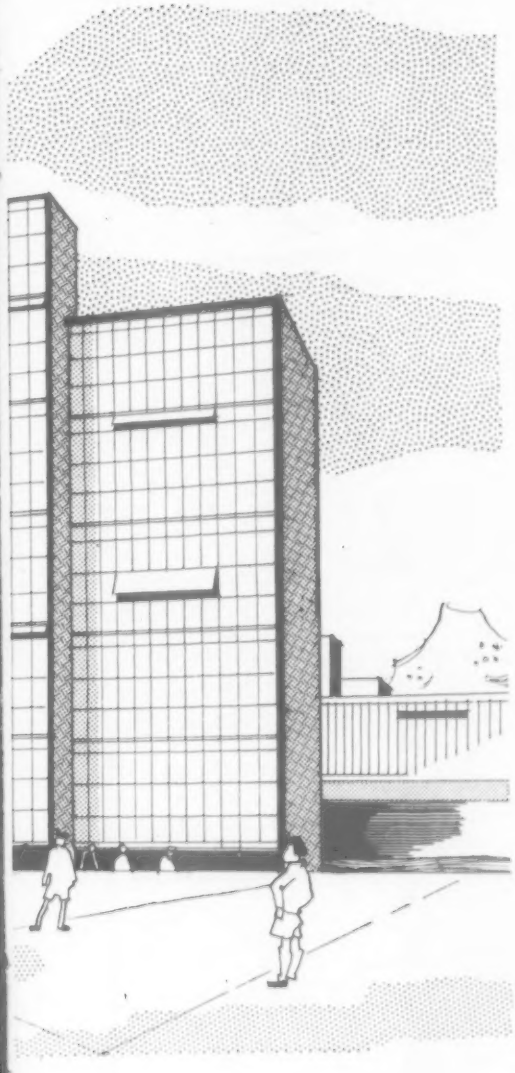


From a design by Edward D. Mills, F.R.I.B.A.

SPECIFICATIONS

2. TOWN SCHOOL



Schools in densely developed city areas must of necessity be built as multi-story buildings in order to provide as much open space on the site as possible. In order to produce economy in construction, such buildings must be designed so that materials are used as economically as possible and the structural frame kept to a minimum.

In such circumstances a light, easily maintained wall cladding, instead of the traditional brick or stone, has much to recommend it, and the example shown illustrates the application of patent glazing for such a purpose. In this case the wall cladding consists of Patent Glazing Bars glazed with ¼" Wired Cast glass up to cill level, and clear glass above. Opening lights are controlled by hand operated gear. The Workshop roof lights incorporated in the shell Northlight and vertical construction are composed of Patent Glazing Bars glazed with ¼" Wired Cast glass.

For all facts about patent glazing, write to the Information Bureau, The Patent Glazing Conference, Burwood House, Caxton Street, London, S.W.1.

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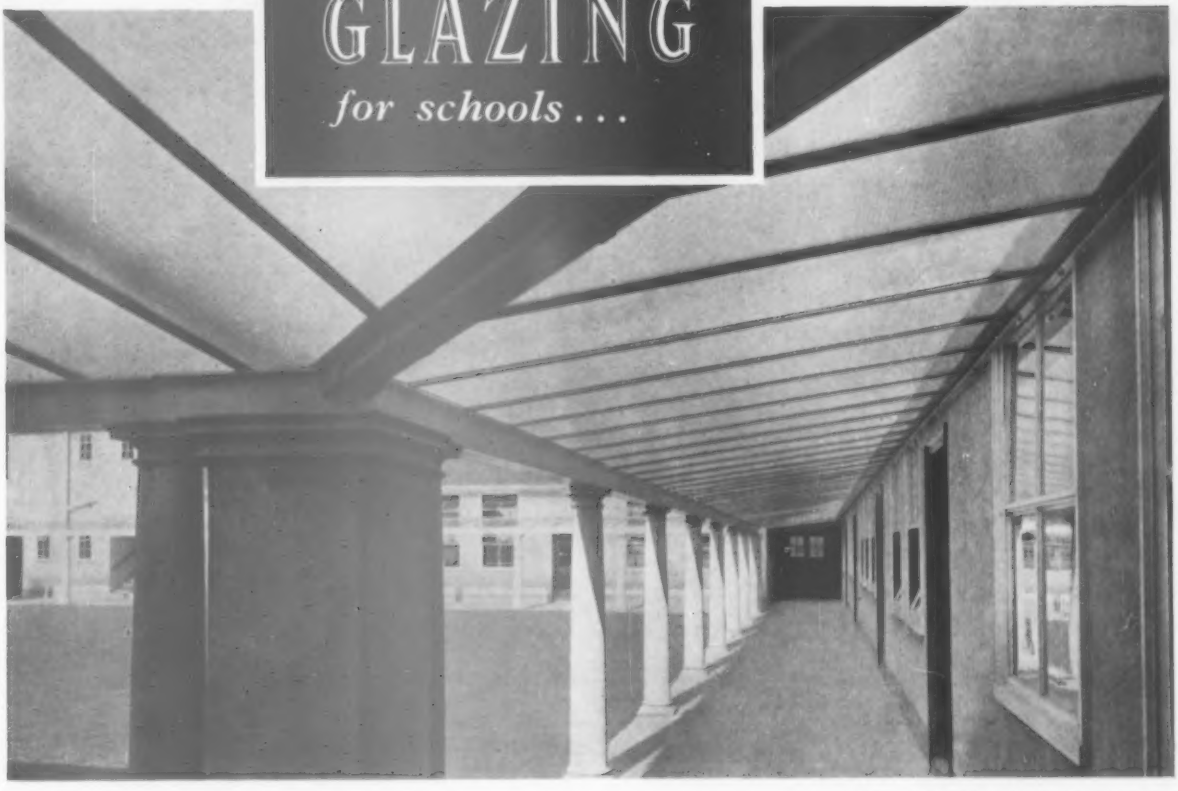

County Council School Verandah at Worcester

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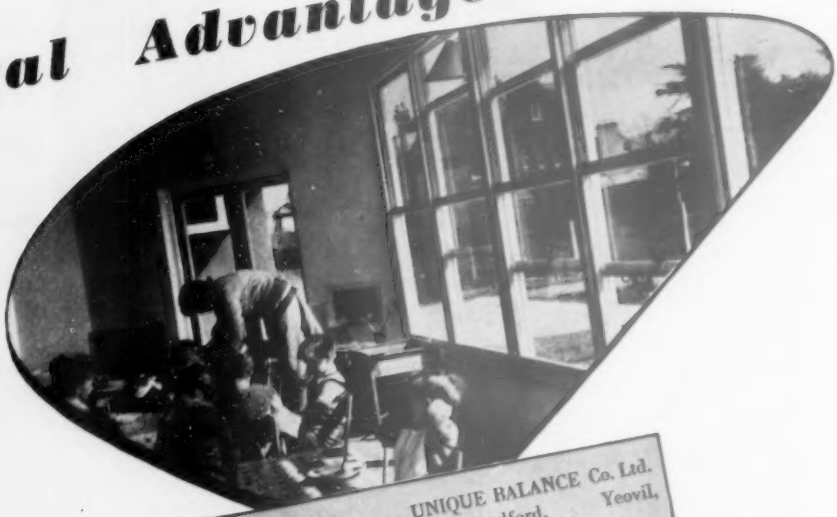

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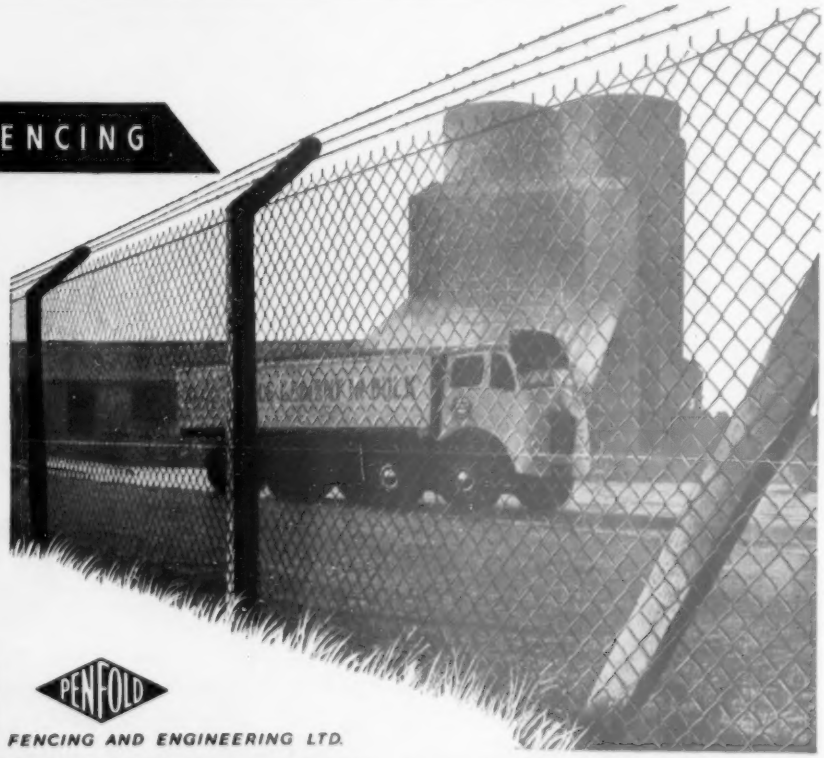

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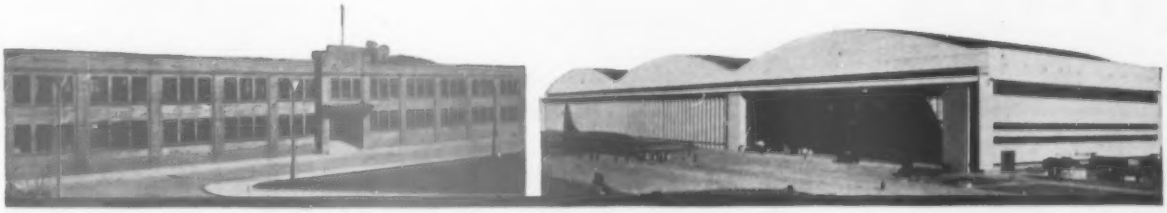

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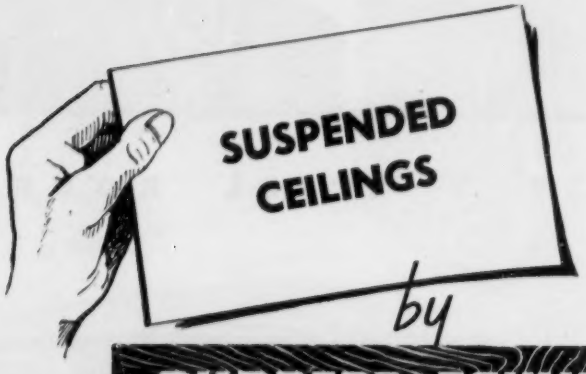
S.D.145

FOUR DWELLINGS SENIOR GIRLS SCHOOL BIRMINGHAM

Architects : John B. Surman & Partners *Builders : S. F. Swift & Sons Ltd.*



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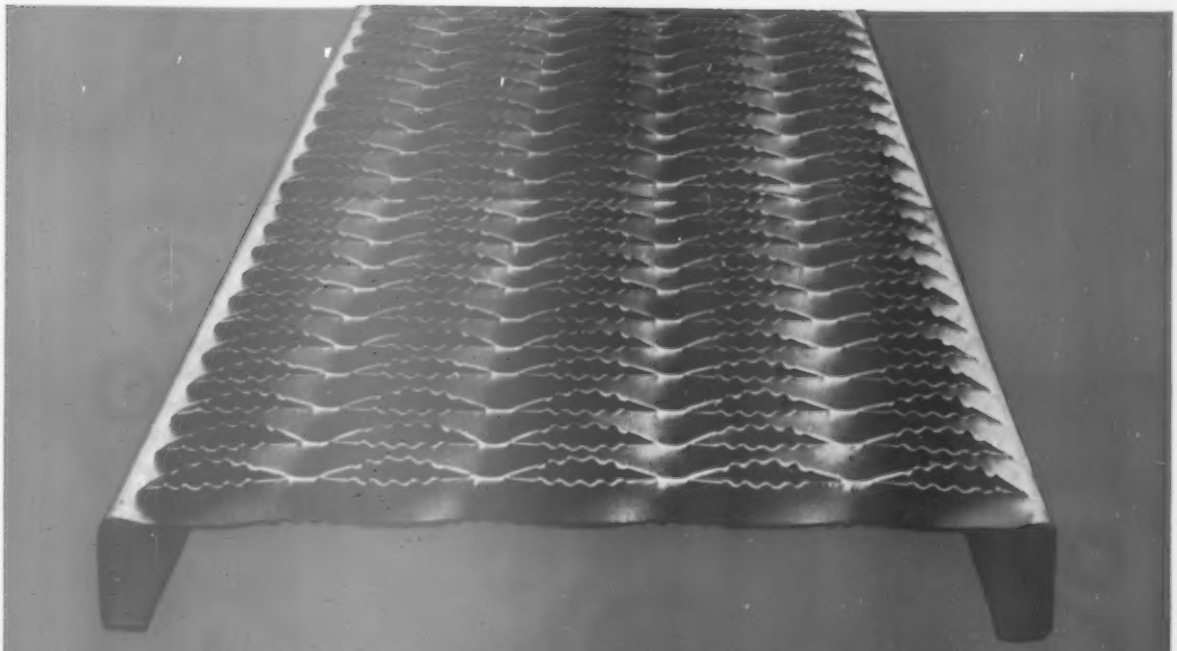

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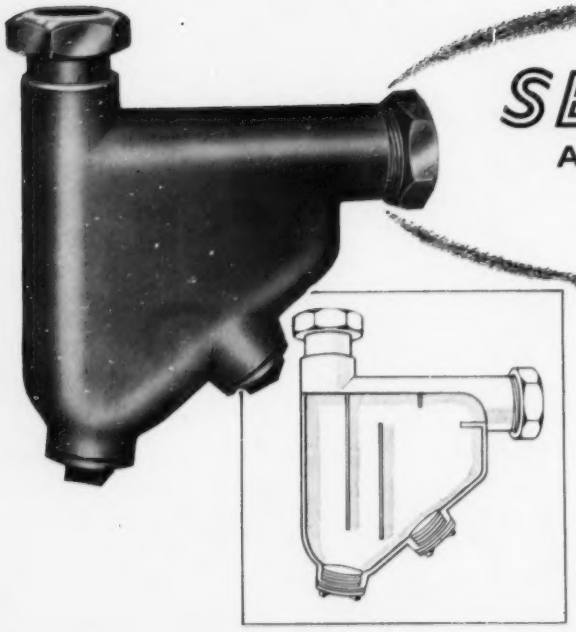

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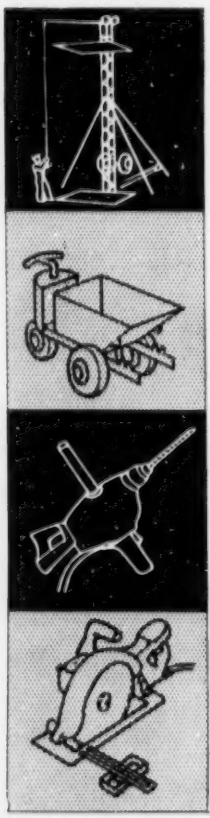

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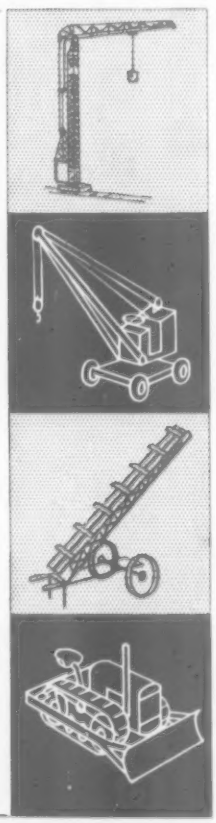

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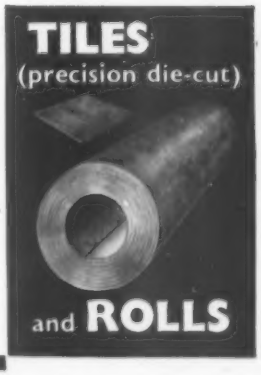

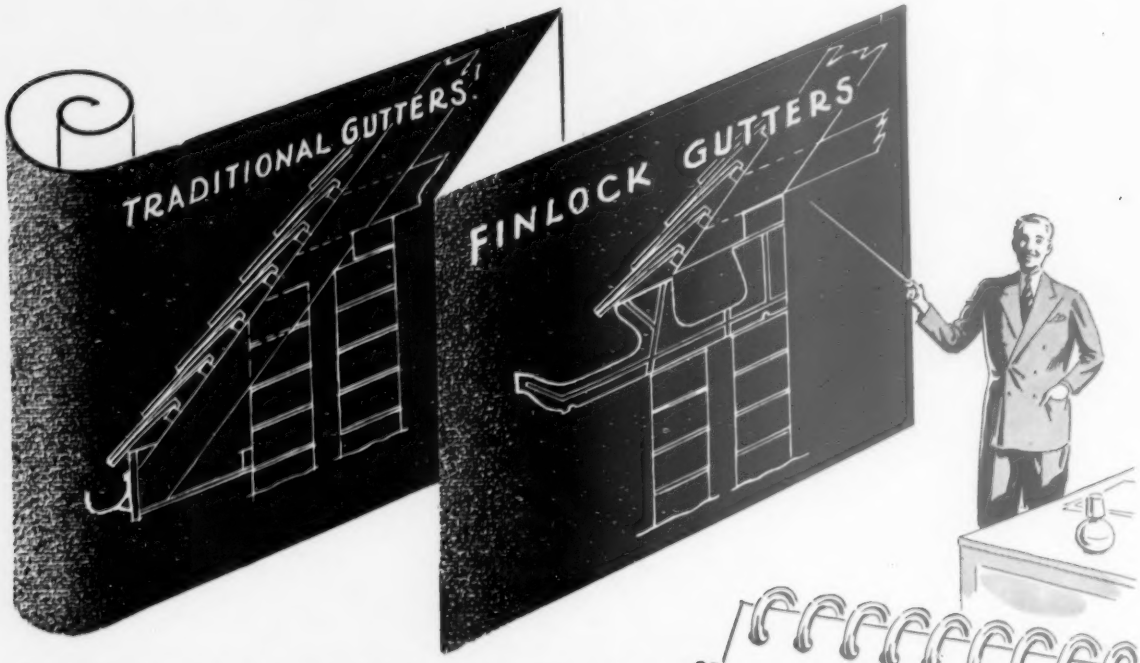

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Vol. 205 No. 23

THE ARCHITECT & BUILDING NEWS

10 June 1954

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THE CONSTITUTION OF THE R.I.B.A. COUNCIL

"IT was agreed to set up a committee of Council to examine fully the present Constitution of the R.I.B.A. with respect to the representation of various classes of membership and various forms of occupation."

It will be interesting to see the actual wording of the committee's brief. We hope it ends with the words: "and to report." Will the committee take written and oral evidence? On what basis will the committee be constituted? Will the findings be made public? Will they be acted upon or will the committee merely be thanked for their labours and their report pigeon-holed, as all too many reports have been?

The questions that automatically spring to mind when one reads this proposal are numerous. We are tempted to ask a further question and that is if you, as a member of the R.I.B.A., were asked to solve the same problem, how would you have done so? We are asking you because if you are a member of the R.I.B.A. it is therefore your problem. It is your representation on the Council of the R.I.B.A. that is being considered. We therefore place the following facts before you and ask for your observations.

The present membership of the R.I.B.A. Council is 75. This figure may surprise you, as it did us, but this is the case. The 1953-54 Council comprises 18 Fellows, 9 Associates and 3 Licentiates, plus the President (Fellow), 2 Vice-Presidents (both Fellows), 2 Past Presidents (both Fellows), Hon. Secretary and Hon. Treasurer (both Fellows), 24 representatives of Allied Societies in the U.K. and the Republic of Ireland (it is interesting to note that of these 24 representatives, 19 are Fellows, 3 Associates and 2 Licentiates), representatives of the Allied Societies in the British Dominions Overseas—10, 5 representatives in this country and 5 in the Dominions; the 5 representatives in this country are all Fellows. The other members of the Council are a representative of the Architectural Association, a representative of the Association of Building Technicians, the Chairman of the Board of Architectural Education, the Chairman of the R.I.B.A. Registration Committee and two representatives of the R.I.B.A. Salaried and Official Architects Committee. Of these six representatives, five are Fellows and one an Associate.

The net result is that the Fellows have 54 representatives, Associates 13 and Licentiates 5. These figures, we fully appreciate, do not when totalled make 75 but the discrepancy arises from the fact that some members act in a dual capacity.

Let us next consider the membership of the R.I.B.A. and how it compares with the representation on the Council. From the R.I.B.A. Kalendar 1944-55 we glean that there are 2,046 Fellows, 10,641 Associates, 2,597 Licentiates and 5,217 Students. The outstanding figure, you will agree, is Associates 10,641, who have only 13 members to speak on their behalf; the 2,046 Fellows, on the other hand, have 54 voices. On the score of classes of membership it must be obvious that a change is necessary on the Council.

We are tempted to ask if the Council was wise in setting up a committee drawn from its own ranks. Would it not have been wiser to have appointed an independent committee of three or four, with a Queen's Counsel as Chairman, an accountant and an eminent layman who could have been drawn from the list of Hon. Fellows or Hon. Associates? The result, it will be agreed, would have been an impartial finding. If the committee is to be drawn from members of the Council what will be the status of the representatives on that committee? If it is appointed on the proportion of membership it should be in the proportion of 1 Fellow, 5 Associates and 1 Licentiate. Will this be the case? It will be interesting to hear who are appointed to this committee.

We fully appreciate that numbers are not always

the best method by which to judge or upon which to base representation.

The R.I.B.A. has a good guide as to how its members are employed from the recent returns to their Questionnaire on Salaried Employment. Whilst we fully appreciate that all the members did not vote, we feel that the percentages given in Table 5 do show how the members obtain their livelihood. In view of these figures it might be considered that the better way to appoint representatives to the Council would be on the basis of the work upon which they are employed and to forget whether they are Fellows, Associates or Licentiates. Representation might be from so many in private offices, divided into large and small practices, so many from salaried ranks, both private, Local and Central Government, etc. An alternative method of representation might be to divide the whole country into constituencies; voting to be on similar lines to Parliamentary elections. Members would then have a real opportunity of electing a Council and not merely 30 members out of 75. It might be argued that local representation is by means of the Allied Societies. We venture to suggest that the members of the Allied Societies are voted to the Council rather than voted for.

EVENTS AND COMMENTS

NEW ABERDEEN STREET LIGHTING

A cold cathode fluorescent tube lighting installation has recently been fitted in two important streets in Aberdeen. This is said to be the first installation of its kind in the world. The lánterns, which are over six feet high, are not carried on standards but fixed to the outsides of the buildings flanking the streets. As far as illumination goes the system seems to work very well, but I wonder how architects feel about the not too beautiful lanterns being fixed to their buildings, and the aluminium-sheathed wiring which leads to lanterns. While anything that can be done to reduce the number of posts, poles, beacons and bollards which litter our streets is to be welcomed, there seem to me to be many æsthetic objections to the planting of street lights on buildings except, possibly, where all the buildings in a street are the same and have the same floor levels. In the picture I saw the thing looked reasonable enough because you could not see the buildings for the lights. Those who deal with street lighting in local authorities are not famous for their æsthetic sense, and this new idea, developed by a powerful manufacturer, may easily appeal to other towns. Let everyone who is interested, then, keep a sharp look-out or some horrors may be perpetrated.

ALUMINIUM IN THE STREET

The use of aluminium for street lighting standards and other street furniture is gaining popularity in the United States. Some of the designs which I have seen are pleasant enough but none is as distinguished as it might be. The capital cost of these poles is roughly the same as for conventional equipment but because, in general, aluminium light standards are not painted in the U.S., upkeep costs are reduced.

THE DICTIONARY OF ENGLISH FURNITURE

This important work, published by *Country Life*, has been enlarged and completely revised by Mr. Ralph Edwards, keeper of the Department of Woodwork at the V. and A. Its price of thirty guineas for three volumes will keep it out of most homes. The dictionary covers the period from medieval times to about 1820. It "begins with the carpenter, picks up the joiner, and ends with the cabinet maker." The production is in the best tradition of *Country Life* Publications, and is beautifully illustrated (2,738 of them with 43 pages in colour).

THE BRITISH STONE FEDERATION

It is a pity that the typography and general arrangement of the first information sheet to be produced by this federation is not better. Having gone to the trouble of producing the sheet to B.S. size I should have thought that they could also have produced something that was easy to read and from which the main points could be picked out at a glance. The type is really too small for comfort and the headings although in different faces merge into the general pattern. In addition, the composition of the front page could have been much better balanced. The idea of a series of sheets giving technical information about stone is excellent, but the sheets themselves should be well put together and presented.

HAMILTON GARDENS, HYDE PARK

You may have noticed that the gardens round the Byron statue in the south-east corner of Hyde Park have recently been returfed and replanted. During the Coronation, His Lordship, and dog, in common with many other London statues, spent some time in a wooden packing case surrounded with the tubular scaffolding of a grand stand. As, it would seem, a reward for this unkind treatment the gardens have been much improved by the addition of more than 450 plants and shrubs presented from private gardens. Spare a moment to look when next you are passing. The Ministry of Works did it.

QUEEN MARY'S TREASURES AT V. & A.

Recently I mentioned this exhibition. I am sure you will want to see it. I found most of the larger pieces of furniture overpowering and not much to my taste, but there are a large number of delightful small pieces. Be sure not to miss the series of excellent photographs in the entrance hall, and the case of dresses, hats and parasols.

By far the greater part of the exhibition consists of small objects of every conceivable kind, many of most exquisite workmanship. The trouble is that to look at them at all carefully would take at least a week.

THE CAFÉ ROYAL

On one of my periodical visits to the Café Royal Grill recently I was greeted by a director of Forte's and thanked for patronizing their latest acquisition. I said at once that I hoped he realized that the room was unique in London and would see to it that it was not in any way altered. I was horrified to hear that "the people here" wanted it considerably altered, and that new table equipment was already on the way. I expressed myself as forcibly as I dared about what I would do if any major alterations were carried out. May I suggest that if you are fond of what is surely our finest restaurant interior you should write to Messrs. Forte's and back me up?

OUT-DOOR FURNITURE AT THE FLOWER SHOW

One of the attractions of this year's Chelsea Flower Show, doubly so for the foot-weary sightseer, was the exhibition of out-door furniture assembled by the Council of Industrial Design. My picture, left, shows a bench in hardwood with reversible seat which can be turned over after a shower of rain. The demonstrator is A. M. Rankin who invented it. It was made by Boulton & Paul, Ltd. The picture on the right shows the "Bikini," easily recognizable as a two-seater chair with rod frame and mesh seat and back. The glass table-top with flowerpot underneath, seems the wrong way round to me. Both are designed by Nigel Walters for A. A. Pegram, Ltd.

KEEP HARLOW TIDY

The Harlow Development Corporation has produced a good booklet and a good idea both with the object of training children to protect the amenities of the town, whether natural or man made, and to keep it tidy. The booklet is simply written and illustrated and gives the familiar "Don'ts." The idea which is also contained in the book is to inscribe on a roll the names of children willing to help in the scheme and to call them "Park and Forest Rangers"; with membership goes, of course, a badge.

The booklet suggests the formation of children's committees and I must say that this seems to me a horrible idea. Any adult who takes any interest in anything has to spend a tremendous time on committees; cannot children be spared from them for a few years? Ordinary decent behaviour is what is wanted and surely the place to teach this is in the schoolroom and not the committee room.

ROLLS-ROYCE GOLDEN JUBILEE

I have mentioned before that architects and Rolls-Royces often go together and that is my excuse for mentioning that there is to be a Concours d'Elegance for R.-Rs. near the Albert Memorial in Kensington Gardens on Sunday afternoon, July 25. Owners who wish to enter their cars should write to Mr. G. L. Frost, 27, Nevern Square, S.W.5, for particulars. They may like to know that in a similar event held last year the standard of preservation and turn-out was extremely high. It is definitely not worth entering anything with dry rot in the coachwork, however dearly beloved the vehicle may be.

FOUNDERS DAY AT THE ROYAL HOSPITAL, CHELSEA

I found the inspection by H.R.H. Princess Margaret, and march past of the Chelsea Pensioners almost unbearably moving. There could be no finer setting for such an occasion than Wren's great courtyard, with its green grass and warm red brick in bright sunshine. The pensioners (average age 76) in scarlet coats and three-cornered hats, and the band of the Welsh Guards in full dress. The statue of Charles II, as tradition demands, was almost hidden in oak leaves in memory of the day when, after the battle of Worcester, he hid from the Roundheads in an oak tree. The march past of the pensioners is in special slow time to enable the maximum number of the older ones to take part—those who cannot march sit around the edge of the parade. This is solemn and immensely affecting. Each man salutes in his own time, gives his own special greeting to the Princess. I defy anyone to see this parade without being moved.

ABNER

Torquay Conference Garden Party, Torre Abbey

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THE British Architects' Conference Garden Party was held in the grounds of Torre Abbey, which was used as the headquarters for the Conference. The Abbey is built on the Benedictine plan around the Cloister Garth and dates from 1196. After the Dissolution, the Abbey passed into private hands, and the last family to own it were descended from Sir George Cary of Newparke, Hants, who bought it in 1662. This family owned the Abbey until it was sold to the

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Corporation of Torquay in 1930. It is now used by the Mayor for receptions and also as a picture gallery for the town.

View 1 shows the President of the Devon and Cornwall Society, Vyvyan Salisbury, with Mrs. Salisbury and friend with back to the camera. Mr. and Mrs. Frank Gollins look on.

One of the Abbey's Norman Archways leading to the south front of the house is shown in 2 and 3, with Conference members.

The gardens at the back of the house, 4 and 5, were a great attraction to the guests. The head of the Torquay Corporation Parks Department has laid out flower beds here, with the plants in family groups. The terrace in front of the house with Conference members is shown in 6, 7 and 8. Professor Leslie Wilkinson from Australia is talking to Mr. and Mrs. Cecil Howitt in the foreground in view 6. The large marquee with members taking tea is shown in 9 and 10.

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NEWS OF THE WEEK

Conference Dinner Speeches

At the Conference dinner, attended by over 300 at the Palace Hotel, the toast to the Borough of Torquay was proposed by Mr. Vyvyan Salisbury, President of the Devon and Cornwall Society of Architects. He said that during the preparations for the Conference they had come in close contact with the civic authorities and he expressed appreciation to them for the efficient way in which they dealt with everything. He mentioned specially the name of the Mayor's secretary, Mr. R. H. Rooke,

He had heard a rumour that it was possible, to meet an urgent requirement, that the inner harbour, Torquay, might be filled in for a car park. As an outsider he could not help feeling it would be a very great mistake, and he could not but hope that another solution would be found.

There was something awfully attractive about the little craft in the harbour, right beside the main street and the shops. We went to the Continent for that sort of thing, and we loved to see it on our own doorstep.

He thanked the editors of the various journals for the excellent write-ups they had given to the Conference. These had helped tremendously in the task of making the gathering successful. This year they had included some delightful photographs of the area, and some equally delightful descriptions.

In reply to the toast, the Deputy Mayor of Torquay, Councillor W. H. White, apologized for the absence of the Mayor (Alderman P. T. Read) who was indisposed, having lost his voice and been ordered to rest.

The Bishop of Truro, Dr. E. R. M. Morgan, gave "The Royal Institute of British Architects and its Allied Societies."

The reply was given by the President of the Institute, Mr. Howard Robertson, who opened by saying he felt the toastmaster (who had announced his honours, including French ones, in full) ought to be associated with the toast. The gentleman, in announcing the President's honours and degrees, had surmounted a hurdle which defeated many toastmasters.

The President said: "We have had a superb conference. The Devon and Cornwall Society has excelled itself, and the allied societies are the branches which keep the parent trunk alive. Every President of the R.I.B.A. comes to realize that very basic truth. It is to the allied societies we owe our strength and vitality. The Conference membership has been exceedingly sprightly, and spice has been provided by the presence at our meeting of three American architects, Mr. Stetson, Mr. Gray and Mr. Montgomery. From Australia has come Professor Wilkinson and from Tasmania we have Mr. Blythe.

Mr. Robertson paid tribute to Messrs. W. Allen and E. D. Mills, who had made history in conference with their paper on "Materials and Techniques." The debt to them was absolutely incalculable.

He expressed appreciation for the staff work carried out so effectively at the Headquarters, at the Devon and Cornwall Society, and by the Corporation of Torquay. It had made the success of the Conference. With that appreciation he coupled an affectionate message of thanks to the Mayor and Mayoress of Torquay (Alderman and Mrs. P. T. Read) for their extraordinarily generous hospitality which completely "made" the first day.

Mr. H. Connolly, County Architect of Essex, proposed a toast to the guests. In it he exhorted them to use the services of an architect when they wanted a building, whether it was large or small. He also asked them to give the architect time to do the work, and, within the limit of the budget, to give him a free hand.

The Lord Mayor of Plymouth (Alderman E. W. Perry) responded.

Licences for New Houses

To make it simpler for people to get a licence to build a house of not more than 1,500 square feet in area, the Minister of Works has decided that a plan of the house need not accompany the application for a building licence, which must now be made to the Ministry's Regional Office.

Plans must always be sent to the Local Authority for byelaw approval, which is required quite separately from the building licence.

The licence when issued by the Ministry will refer to the plans submitted to the Local Authority.

COMING EVENTS

The Institution of Sanitary Engineers

June 11, at 5 p.m. Annual General Meeting. At 6 p.m. a Paper entitled "The Engineer's Share in the Construction of Bracknell New Town," will be presented by J. T. Kendal, A.M.I.C.E., M.I.Mun.E., Chief Engineer, Bracknell Development Corporation. At Caxton Hall, Westminster, S.W.1.

Royal Institute of British Architects

June 15, at 6 p.m. Discussion on Model Building Byelaws, introduced by R. A. Simons of the Building Research Station, at 66, Portland Place, W.1.

Council for Visual Education

June 17, at 2.15 p.m. Annual Meeting. Talk on "The Appreciation of Old Buildings," by the Rt. Hon. the Earl of Euston, Deputy Chairman of The Society for the Protection of Ancient Buildings. At the Housing Centre, 13, Suffolk Street, S.W.1.

L.C.C. Housing Maintenance Estimates

Capital and maintenance estimates for L.C.C. housing for 1954-55 total £34,023,440 states reports of the housing and finance committees to be considered by the council at its meeting next Tuesday.

Estimates of expenditure on capital account total £21,000,000, the same as for the two preceding years; and on maintenance account £13,023,440, an increase of £2,109,160 over that for the previous year.

The main reasons for this increase are an addition of about 6 per cent in the number of dwellings to be maintained: an increase in the contributions to the Metropolitan Borough Councils because of the greater number of dwellings provided by them; and an enlarged programme for replacing obsolete equipment in dwellings built by the council between the wars.

From the end of the war to March 31 last gross capital expenditure on the acquisition of permanent housing sites was about £8,500,000, on the development of sites about £117,000,000, and on the provision of temporary housing accommodation about £2,000,000.

The total area of post-war sites acquired and developed, being developed or ready for development on March 31 was 1,330 acres inside and 5,457 acres outside the county. Further sites, totalling 859 acres altogether, have been approved and some acquired.

All these sites provide space for more than 99,000 new dwellings, of which 73,242 were built or in construction at March 31.

Between the end of the war and March 31, last, 59,590 new permanent dwellings were constructed at the council's estates, 7,865 temporary houses were provided, 7,934 dwellings restored, 2,913 war-destroyed dwellings rebuilt and 56 dwellings provided from conversions and adaptations, making a total of 78,358 new and rebuilt dwellings.

Generally the development of estates had proceeded satisfactorily. On March 31 men employed on new housing sites totalled 10,139, and about 6,000 were engaged on maintenance work.

The greatest progress during the year was at Aveley Estate, Essex, where a further 1,584 new houses were completed, and at Boreham Wood, Herts (1,251).

Concerning slum clearance, the total number of declared areas or groups of areas since the war is 69, comprising 4,710 houses accommodating 16,112 persons. Preliminary work for a second five-year programme is being undertaken.

Concerning slum clearance and the 1954-5 estimated expenditure on maintenance, the following amendment has been tabled in the name of the Hon. John Fremantle (C.), to be seconded by Mr. R. D. Gilbey (C.).

"The Housing Committee and Finance Committee be informed that the Council observes with regret that only 460 slum dwellings have been demolished since the Council approved the report of the Housing Committee on July 31, 1951, envisaging a large slum clearance programme due for completion by 1956, and instructed to take the directions of the Council on the question of approval of a supplementary maintenance estimate in respect of an acceleration of the slum clearance programme."

Further progress has been made in providing modern amenities at some of the Council's older estates.

Of the capital estimates totalling £21,000,000 for 1954-55, £2,500,000 is for the acquisition of land mainly for permanent housing. The remainder is for the development of sites, and covers the construction of roads and sewers, the provision of flats, maisonnettes and houses, including ancillary work, and a small sum for the reinstatement of war-damaged dwellings. It is expected that £20,000 will be recovered from the War Damage Commission.

The maintenance estimates have been prepared on the assumption that 174,708 permanent and temporary houses and flats will have been completed by the end of March next year, and that the average number available for occupation during the year will be 170,113. There are also about 4,500 occupied dwellings in property acquired for redevelopment, making an estimated total number of 179,208 dwellings under the Housing Committee's management at the end of the financial year.

Industrial Design in Ireland

An increasing interest in, and economic need for, contemporary industrial design in the Republic of Ireland, has led Design Research Unit of London to an extension of its practice into that country and to opening an office in Dublin.

An associated organization has been set up there under the title of Design Research Unit of Ireland with an office at 11, Ely Place, Dublin. Misha Black, O.B.E., P.S.I.A., M.Inst.R.A., and Milner Gray, R.D.I., P.P.S.I.A., are joint Principals of the two organizations and Senator Edward McGuire, Mr. Alen Nolan and Mr. Dermot O'Regan are the Irish Directors under the Chairmanship of Sir Herbert Read.

The Dublin Office of Design Research Unit is at present organizing the first exhibition of industrial design to be held in Dublin. It is being designed and produced for The Irish Arts Council and is intended to show design trends in some nine countries. Nearly 300 exhibits have been collected from Canada, Denmark, Great Britain, Finland, Germany, Italy, Sweden, Switzerland and U.S.A. and show a cross section of contemporary design of furniture, carpets, light fittings, textiles, wallpapers, ceramics, glass, domestic and industrial equipment, packing and print.

Negotiations are in progress to tour a condensed version of the Exhibition to other cities and towns in the Republic of Ireland in the autumn.

R.I.A.S. Awards

The 1954 awards of the Royal Incorporation of Architects in Scotland are:

Rowand Anderson Studentship—£125 and a silver medal to D. P. Paterson, Glasgow; hon. mention to W. Y. Salter, Aberdeen; G. F. Polson and J. G. Hislop, Glasgow.

Incorporation Prize—£50 to Miss P. Whitson, Glasgow. Hon. mention, T. M. Gray, Glasgow; A. C. Scott and J. Campbell, Edinburgh.

Dutland Prize—£60 to G. Duncan, Glasgow. Hon. mention, C. Pacitti, Aberdeen; J. P. Leeson, Dundee; R. E. G. Miller and J. S. Simpson, Glasgow and A. G. Giffen, Edinburgh.

Lorimer Memorial Prize—£10 to C. Pacitti, Aberdeen. Hon. mention, C. W. Pressley and J. B. Davidson, Aberdeen.

One-Year Course in Concrete Practice

The City and Guilds of London Institute have prepared a one-year part-time course in Concrete Practice which is intended to provide a qualification for supervisors and potential supervisors engaged in concrete work, denoting ability to carry out efficiently the processes connected with the production, placing and finishing of concrete.

The course is planned on a basis of 24 lectures, i.e., one 2-hour evening lecture per week, and the scheme will operate from the commencement of the session 1954-55. The first examination, which will consist of a written paper and an oral test, will be held in May, 1955, and certificates will be awarded to successful candidates.

It is hoped that colleges offering this course will adhere to the suggested sequence of lectures as published in the syllabus, in order that a student whose work necessitates his moving from one part of the country to another may continue his studies without loss of continuity.

Full particulars of the course can be obtained in pamphlet form from the City and Guilds of London Institute, Department of Technology, 31, Brechin Place, South Kensington, London, S.W.7, price 6d.

R.I.B.A. Examination for the Office of Building Surveyor under Local Authorities

At the R.I.B.A. Examination for the office of Building Surveyor under Local Authorities held on April 28, 29 and 30, 1954, 19 candidates presented themselves and the following were successful: Frank H. Burton; Frederick E. Casemore; Lionel G. Chilcott; John W. Hall; Ronald V. Kidd; Roy Sharpe; Norman E. Whitby; Francis W. Woodcock.

CORRESPONDENCE

Electrical Floor Warming

To the Editor of A. & B.N.

Sir,— I have read Mr. Bruce's letter in your issue of May 20, and I trust you will allow me to correct an erroneous impression he has given about a point in my paper, "Electrical Floor Warming." The substance of Mr. Bruce's criticism seems to be that I have assumed that solid fuel boilers are capable of an efficiency of only 40 per cent. This is not so and if he reads my Paper carefully he will find that I said:—

> "Usually we find inadequate allowance is made for factors such as boiler banking and stand-by losses, pipe losses, and the various operating considerations such as lack of skill on the part of boiler attendants, variable quality fuel, fouling of boiler between cleaning periods, etc., which all go towards making solid fuel heating efficiencies of the order of 40 per cent instead of the 60-70 per cent sometimes claimed."

I was comparing the anticipated costs of heating a building by electrical floor warming and by the ordinary solid fuel "radiator" heating system. With electrical floor warming, 100 per cent of the electrical energy is converted to heat in the warmed floor. With solid fuel, not only have boiler losses to be taken into account, but also pipe work losses and the fact that the convection "radiator" method of heating requires more heat than floor warming. Heating engineers have different views about the last-mentioned factor, ranging from a saving of just a few per cent to 41 per cent in favour of floor warming.

I have been always most careful to avoid giving the impression that electrical floor warming is the answer to every heating problem. This is clearly seen from the following extract from my paper which appears on page 468 of your publication of April 26:—

> "It would be foolish to attempt to lay down that electrical floor warming is the cheapest method of heating any building, as some buildings, by reason of use or construction, are more suited to floor warming than other buildings.
>
> "Floor warming necessitates the building being heated 24 hours a day. It is, therefore, eminently suited to buildings like hospitals, which are in constant use. It is, however, less suited to buildings requiring warmth for very few hours each day."

The fact remains, however, that, when all factors are taken into account, electrical floor warming can generally compete favourably with other methods of heating. This is being proved from the good results obtained with electrical floor warming installations in Scotland, and, no doubt, south of the border.

I am, etc.,

J. W. MOULE.

Conference Paper Discussion

Parts I to III of the paper "Materials and Techniques," by W. A. Allen and Edward D. Mills, was published in the A. & B.N. of 20/5/54. Part IV of the paper is published on pp. 698 & 699 of this issue

THE printed paper on "Materials and Techniques" prepared jointly by W. A. Allen and Edward D. Mills was circulated to all members of the Conference, and on the morning of Thursday, 27th and Friday, 28th May, was the subject for discussion by some 400 architects. To make the subject matter more handleable the paper was taken in two separate stages, the first on Thursday dealing with Materials, and the second on Friday with Techniques. This division, however, was not rigid, and inevitably the discussion wandered freely over the wide field of the paper at both sessions.

Materials: First Day

The authors briefly introduced the subject high-lighting some of the important sections of the paper. Mr. Allen dealt with the problem of the forces of nature which architects must consider, the ever-present problem of damp, and the need for a healthy regard for the English climate which he said was one of the toughest in the world. Not only have we to combat moisture from outside the buildings we design, but also moisture from within for "we make our buildings in dampness, we often deliver them in dampness, we store them on sites in dampness, and we built them into structures in wet weather, using a great deal of water to join them together." This problem of moisture is one we must face when considering new building material and techniques; particularly when we use impervious materials for the facing of buildings instead of ones capable of absorbing moisture which can later dry out. For example, the glass façade of the United Nations building Secretariat block had a run off of water during heavy rain of 5,000 gallons per minute; this water would be absorbed harmlessly by normal building materials such as brick or stone.

Mr. Allen also emphasized the fact that our buildings are constantly changing in size through the action of weather externally, heat and cold, and as the result of better heating and thermal insulation internally. This range of movement varies between summer and winter and if no special precautions are taken will be in the order of one inch in 150ft as between summer high temperature and winter low temperature. These are but a few of the factors we must take into consideration in our buildings in relation to the forces of nature. "We must work out our building practice so that success 'comes natural.' The forces of nature will win in the end, and we are better off letting them have their way, or sidestepping them, rather than trying to defy them."

Mr. Mills briefly recalled the headings set out in this section of the paper and then proceeded to deal with one or two specific materials illustrating his remarks by producing examples of American and Continental bricks and blocks. The first material, "pulverized fuel ash" bricks, were shown; these proved to be pleasant in colour and as Mr. Allen pointed out, the present annual output of ash using a small amount of clay was sufficient to produce 1,000 million bricks a year. Other bricks mentioned and shown were the coloured glazed bricks used by Saarinen on the General Motors buildings in Detroit; the coloured, glazed, and perforated brick, and the "manganese spot" brick all made in America; but not unfortunately available here. These bricks are all self-cleaning, well made, and used with care could give a liveliness and sparkle to modern buildings which would be permanent. The speaker also showed a range of modular perforated sand-lime and burnt clay blocks from Germany, and Mr. Allen pointed out that the slots in some of the blocks had been specially arranged to produce the maximum thermal insulation value. The production of some external glazed bricks of this kind and quality would be welcomed in this country; they might not only be less liable to failure as they were "built-in" and not "stuck-on," but they might also show economic advantages.

Among other materials briefly referred to by Mr. Mills was fibrous plaster, an old material given a new lease of life by the 1951 South Bank Exhibition and the Hertfordshire Schools programme, and one which had a surprisingly long life even when used externally as shown by the last of the Wembley Exhibition buildings now being demolished to make way for the new B.B.C. television centre. On the question of floorings the need for a hardwearing, versatile, good looking and reasonably cheap floor particularly for industrial use was felt by the authors to be a particularly pressing need, and although some information about low-water ratio compacted cement screeds was available from America, we had little experience of this technique over here. A factor of importance was the preparation of the subfloor on which the finish was placed, too little care is usually taken in cleaning the subfloor of "foreign" materials, builders rubbish, etc.; the failures we get, therefore, should not come as a surprise to us.

Following their introduction, the authors showed black-and-white coloured slides illustrating many of the points they had raised. Among those of special interest were coloured slides of Saarinen's General Motors Buildings showing the glazed bricks referred to earlier; American buildings using painted high-quality clinker blocks externally; and contrasting slides showing two reinforced concrete buildings, both completed in 1932; one in Switzerland still looking as good as new; and one in England cracked, crazed and discoloured. A telling illustration was the photograph of a typical English job, almost flooded with water; and a slide showing cracked cement rendering on the soffit of the Lever Building (New York) low block, proved that American architects have just as much trouble with renderings as we do.

Discussion on Materials

Thursday morning's discussion was lively and flowed easily, speakers from the floor following one another without a pause, their remarks being commented on by the authors of the paper from the platform. Naturally, the subjects mentioned ranged over the entire field of the first half of the official paper, but special emphasis was placed on certain aspects which were of obvious concern to all conference members. Bricks, in general, came in for a good deal of discussion, some members suggesting that brick was the best building material ever invented. The demand for coloured glazed and perforated bricks, larger clay slabs and modular bricks received general support, and suggestions made by the authors that the Swedish system of delivering bricks to the site packed

[Continued on page 697

to prevent damage might be adopted in this country was also welcomed; in America a similar system results in a breakage rate of only one-tenth of one per cent.

Several speakers agreed with the authors' points concerning dry assembly and the elimination of wood materials from the building site. It was felt that not only would this make for better building, but also important, speed and accuracy, and might ultimately reduce costs, particularly if the question of handleability was considered by the architect so that the units were suitable for the lifting equipment available. Mr. Allen pointed out that a great deal of preliminary consultation on the subject of lifting, etc., was necessary, and the economics of the job could be affected by the way in which the mechanization is organized. Whilst agreeing with the use of light structures for speed and economy, several speakers said they had found trouble with acoustics in such structures, and suggested that the requirement for good acoustics was mass, and the lack of this in a new lightweight structure made noise a serious problem. The poor quality of technical information and the lack of useful facts in technical advertising came in for a good deal of criticism, and delegates generally expressed dissatisfaction with the quality of technical information, as well as representatives of many firms, and reference was made to the fact that a British Standard does exist for trade literature. It was generally agreed that a great deal could be done to produce trade literature of a standard size with useful information, and that firms should engage technically trained representatives to provide information architects require. It was also felt that manufacturers should be more willing to inform architects of the limitations of their material, and to be prepared to produce Building Research Station test certificates. It was felt that the B.R.S. could make more positive statements about materials, but Mr. Allen pointed out that the law of libel raised many difficulties in this respect. The American catalogue systems were quoted as examples we might well follow in this country. Although a good deal of time was divided to failures, it was suggested that the B.R.S. should interest themselves in successes, and Mr. Mills suggested a Success Department to which architects could send information of satisfactory materials and techniques. Mr. Allen, on behalf of the B.R.S., responded immediately with enthusiasm, and said that as soon as the successes came along the department would be started. On the other hand, practically every speaker paid tribute to the help architects received from the B.R.S. and it was felt that they should be encouraged by reporting to them on work that is satisfactory.

The question of building in our English climate brought several points from speakers, and the question of smoke pollution was raised. An American delegate, Mr. Stetson, representing the American Institute of Architects, pointed out that they also have climatic conditions to face, e.g., 10in of rain in twelve hours, with a wind averaging 75 m.p.h. and ranging from 40-150 m.p.h., with sustained gusts of over 100 m.p.h. for two hours. These conditions were in Florida, but did prove that English weather was not the only weather which affected buildings. On this point, Mr. Allen pointed out that it is easier to cater for a tropical storm in the form of a frontal attack, but the English weather was more like a fifth column, which was therefore more difficult to deal with. Another point Mr. Stetson raised was the question of dirty buildings which were so black by smoke pollution that much of the detail had disappeared. He was concerned that the surface of the buildings has been eaten away as a result of chemical action, and gave Pittsburg as an example, where smoke control for the last two years had been so successful that the whole of the city had been cleaned up. Mr. Allen agreed that the example of Pittsburg was one to be admired. Mr. Mills commented that if some of our buildings were cleaned we might get a shock and wish the soot was back again. Other speakers pointed out that the question of smoke abatement in this country was being given consideration, and that Manchester had a smokeless zone which was already proving effective. At the end of this session, it was suggested that architects should find some means of exchanging their information on both success and failure in building work as this was the best way of learning from past experiences.

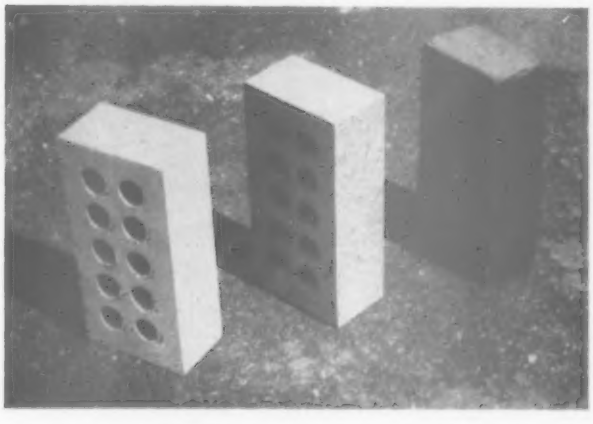
* * *

Techniques: Second Day

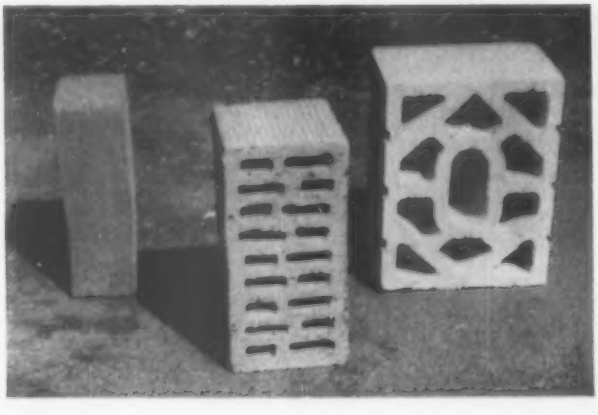
The second day's proceedings were opened by Edward Mills who briefly introduced the first part of the second half of the joint paper. He dealt with problems of curtain walling which were considered, and suggested that the fact that the wall surfaces were impervious and the large volume of rain was able to run down the wall face, meant that the joints in the cladding were particularly vulnerable. The problem, therefore, was the designing of the joint in any cladding system, and one of the interesting developments

[Continued on page 697

Perforated and glazed bricks. Manganese spot brick (centre).



German sand-lime and burnt clay blocks. P.F.A. brick on left.



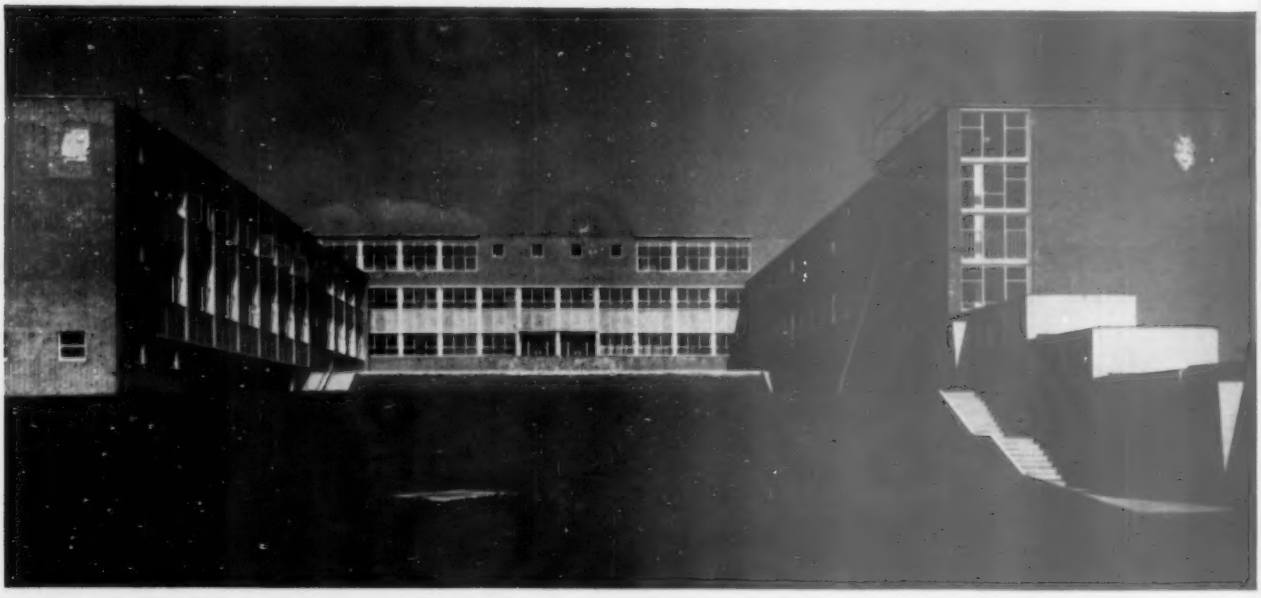
FOUR DWELLINGS SCHOOL, QUINTON

Architects: JOHN B. SURMAN & PARTNERS

THIS school has been built in a rapidly developing suburb of Birmingham, and has been designed as a three form entry Secondary Modern School, to accommodate 510 girls between the ages of 11 and 16. The adjacent mixed school, built in 1938, has now been modified to cater for boys only. Between the girls' school and the boys' department is the new dining block and kitchen, serving 350 meals to both girls and boys in separate dining rooms.

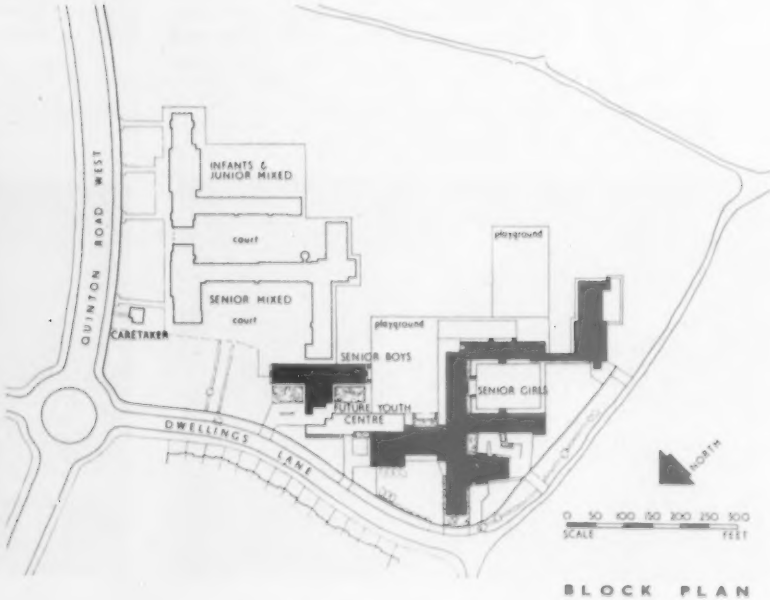
Particular emphasis has been placed on the design and planning of the assembly hall and its ancillary rooms, in order to provide increased accommodation for the flourishing local dramatic society, and the school will be used to provide evening instruction for a number of adult classes. It is intended in the near future to complete a block adjacent to the hall, which will house the youth centre. In this way it is hoped that the school will play its full part in the social life of the new suburb.

The school was included in the 1949 school building programme, and work was commenced in December,



Exterior from South-West

Detail of Sculpture; East Block, Senior Girls' School



BLOCK PLAN

for the City of Birmingham Education Committee

1949, and the complete school was opened at the start of the school year in September, 1953. The contract figure for the building work was £216,000.

Construction :

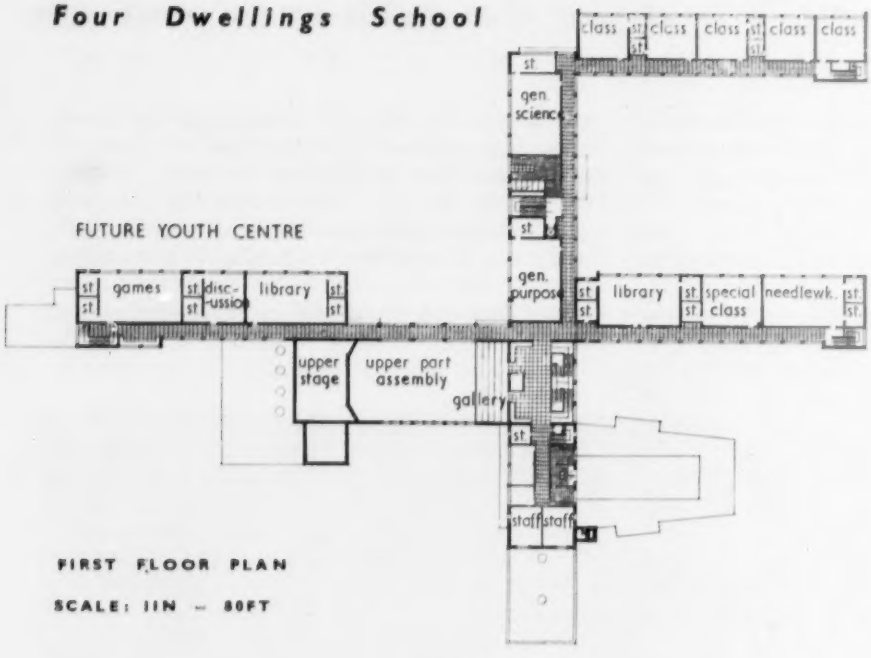
Framing: Structural steelwork grid on R.C. foundations, beamed where necessary to avoid subsidence. Walls : Brick multi-coloured rustic orange red, bonded to backings throughout. Cladding panels in precast concrete with pebble dash facing. Parapet copings, window drip moulds and other dressings in reconstructed stone. All walls plastered internally throughout. Floors : Precast hollow block where suspended and finished with non-slip composition. Assembly Hall oak strip flooring : Classrooms, Beech block : Gymnasium, Chilean laurel strip. Ceilings: Suspended fibreboard with sound-absorbent surfaces throughout. Roofs: Flat, hollow beam precast concrete, with 3-ply Macasfelt covering and limestone tar finish. Windows : Metal casements purpose-made heavy section galvanized or rust treated throughout. Doors: Externally metal faced flush or glazed. Internal: 2in solid core flush or glazed as necessary. Heating: Low pressure hot water, with independent hot water supply to lavatory basins and showers. Sewage Disposal: Partly gravity from north-eastern portion of site and lifting apparatus with Lift and Force Unit Ejector from lower southern boundary, both discharging into main Corporation sewer in Quinton Road West.

The Decorative finishes

The decorations were in the nature of an experiment in the use of the new Archrome range of colours, and the architects are satisfied that the result, while by no means perfect, has such a generally favourable environmental effect on both staff and students, that it has been worth the additional trouble entailed both in its conception and execution.

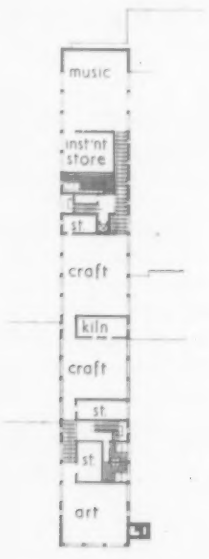
Change of level in Corridor to Gymnasium

Four Dwellings School

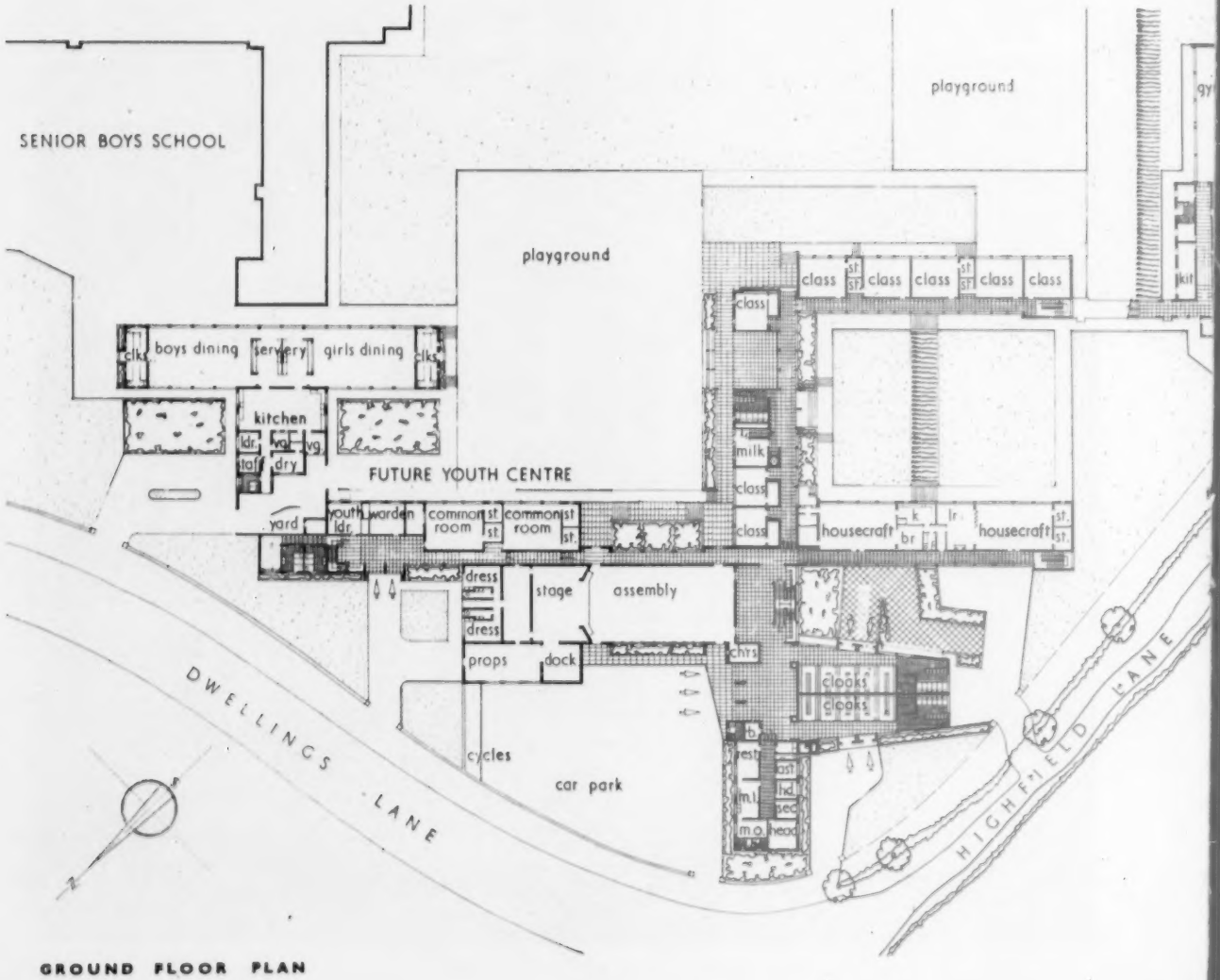


FIRST FLOOR PLAN

SCALE: 1IN – 80FT



SECOND FLOOR



GROUND FLOOR PLAN

General Contractors:
S. F. Swift & Sons, Ltd.

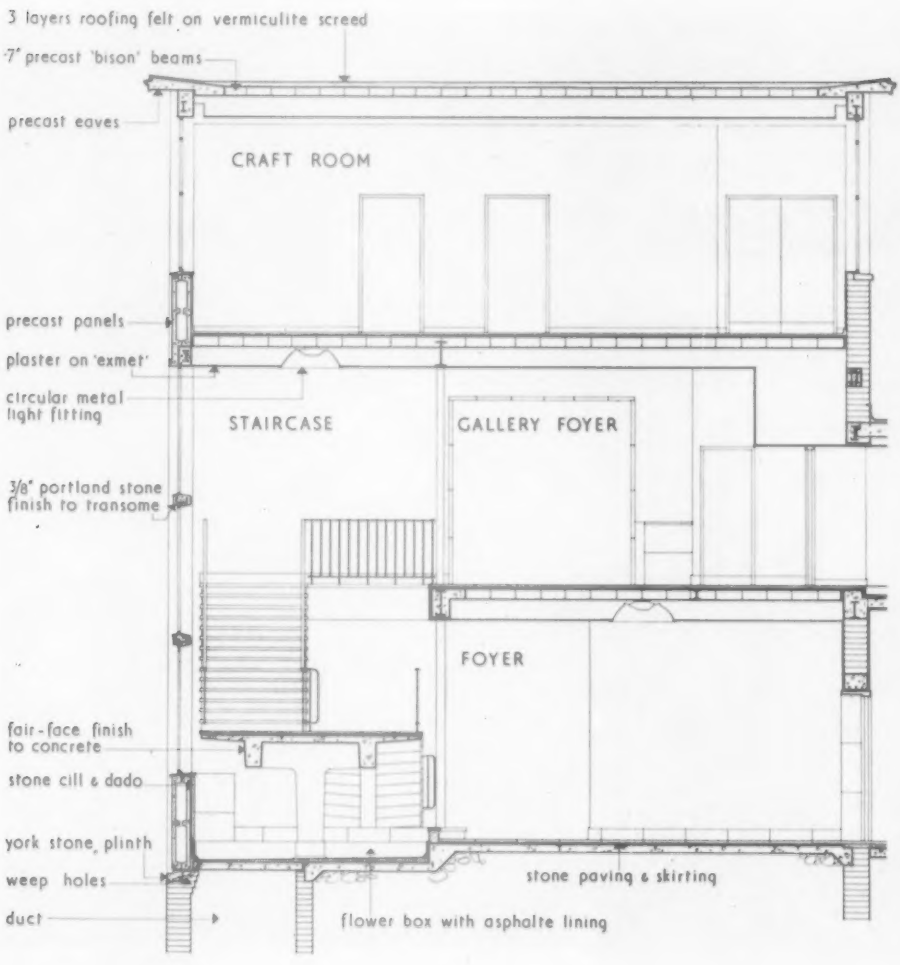
Asphalt: Neuchater Asphalt Co., Ltd. *Balustrades: Handrails:* J. R. Pearson (Birmingham), Ltd. *Bituminous Felt Roofing:* D. Anderson & Son, Ltd. *Cork Tile Flooring:* Cork Insulation and Asbestos Co., Ltd. *Cloakroom Fittings, Fencing and Gates:* Mountford Bros., Ltd. *Cycle Stands:* Alfred A. Odoni, Ltd. *Doors:* Leaderflush, Ltd.; Venesta, Ltd. *Glazed Wall Tiling and Vitreous Floor Tiling:* Carter & Co., Ltd. *Goods Lift:* Keighley Lifts, Ltd. *Hardwood Block and Strip Flooring:* J. A. Hewetson & Co., Ltd.; Hollis Bros., Ltd.; Stevens & Adams, Ltd. *Ironmongery:* Parker Winder & Achurch, Ltd. *Linoleum Flooring:* Kean & Scott, Ltd. *Paint:* Thomas Parsons & Sons, Ltd. *Precast Cladding Panels:* Tarmac, Ltd. *Precast Concrete Flooring and Roofing:* Concrete, Ltd. *Reconstructed Stone Paving:* Constone, Ltd. *Reconstructed Stonework:* Girlings' Ferro-Concrete, Ltd. *Roller Shutters:* Roller Shutters, Ltd. *Sanitary Fittings:* A. D. Foulkes, Ltd. *Seating (Fixed):* Gaskell & Chambers, Ltd. *Sewage Lift:* Tuke & Bell, Ltd. *Sliding Doors:* John Gibbs, Ltd. *Staircases and Surrounds:* Constone, Ltd. *Stone Paving:* Thos. Wragg & Sons, Ltd. *Structural Steelwork:* Horseley Bridge and Thomas Piggott, Ltd. *Suspended Ceilings:* Expanded Metal Co., Ltd.; Midland Wallboards, Ltd.; Rudders & Paynes, Ltd. *Tarpaving to Playgrounds:* Birmingham Asphalt & Paving Co., Ltd. *Ter-*

razzo Flooring: Roman Mosaic, Ltd *Texicrete Flooring:* Standard Pavements, Ltd. *Thermoplastic Tile Flooring:* J. A. Hewetson, Ltd.; Neuchatel Asphalt Co., Ltd. *Turfing and Planting:* E. T. Breakwell. *Veneered Panelling:* Venesta, Ltd. *Wallpaper:* John Line & Sons, Ltd.; Arthur Sanderson & Sons, Ltd. *W.C. Doors and Partitions:* Flexo Plywood Industries, Ltd. *Windows, Metal; Doors and Doorframes:* Henry Hope & Sons, Ltd.

Top right: Main Entrance Hall. Centre: Classroom. Bottom: Assembly Hall from Stage.

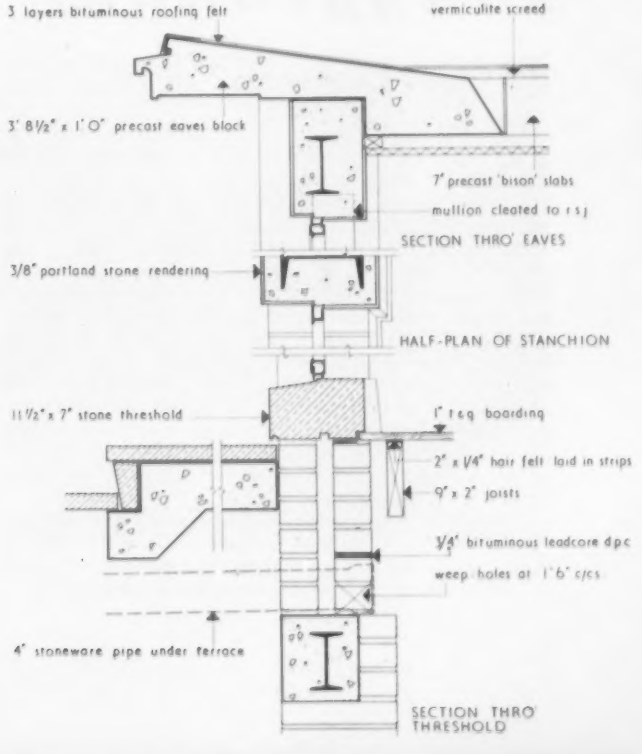
Classroom approach to main staircase. From the first floor ☛

Four Dwellings School



TYPICAL SECTION
SCALE, 8FT TO 1IN

DETAIL 1/20 F.S.


3 layers bituminous roofing felt
vermiculite screed
3' 8½" x 1' 0" precast eaves block
7" precast 'bison' slabs
mullion cleated to r s j
SECTION THRO' EAVES
3/8" portland stone rendering
HALF-PLAN OF STANCHION
11½" x 7" stone threshold
1" t & g boarding
2" x ¼" hair felt laid in strips
9" x 2" joists
¼" bituminous leadcore dpc
weep holes at 1' 6" c/cs
4" stoneware pipe under terrace
SECTION THRO' THRESHOLD

Playgrounds

The first of a series of articles by GORDON LOGIE

I. THE PROBLEM

IT is not easy for adults to look at the world through children's eyes; to see with their vividness; to share their excitements; and to recapture the sense of newness and adventure which is childhood.

But unless we can live with children in their private world, we cannot begin to consider how best we can furnish it for them. For that is what playgrounds are in their essence—furniture for the fantasy world of childhood.

Children's play is not a mere casual filling in of time between school lessons, mealtime and bed. It is an essential part of growing up. Through play a child learns to use its muscles and to co-ordinate its movements with ever-increasing refinement and skill; in its contact with other children it laboriously acquires a social sense; by imitation of a thousand and one adult activities it gradually grows into a full human being.

The natural opportunities which children have for play depend entirely on their environment. Children living in or near to the country are probably the luckiest. They are still in contact not only with nature, which for them means trees to climb, woods to make camps in, hills and valleys to explore and ponds and streams for paddling and sailing boats, but also with the fascinating mysteries of the farmyard, and sometimes even with such delights as helping with the harvest, or watching a blacksmith at work shoeing a horse. Country children do not really need playgrounds. The countryside is their playground and they have plenty of opportunities for developing their natural aptitudes in the best way of all, in constant touch with the actual visible world of their elders.

But in our industrial civilization the proportion of children growing up in such ideal surroundings is bound to be small. Most of our towns are too large and have their buildings packed too closely together. There are too few parks and no open country within easy reach of the children. The very machinery of living is concealed from the children, who grow up with their senses starved and their imaginations stunted. It is for these unfortunates that playgrounds of the right kind are a vital necessity if they are to develop fully into human beings.

If the playgrounds are lacking the children's lives are thwarted and their unlimited energies break out into hooliganism, bullying and even downright crime. The fault is ours for depriving them of something which is just as much their birthright as air, food, and clothing. We must for their sakes and ours see that they have the basic necessities for play.

What are these basic necessities? First of all they must have sufficient opportunity to "let off steam." Children who are adequately fed and housed have virtually endless energy. They need plenty of space to run around, to shout, play games and generally enjoy themselves.

Secondly they need opportunities to develop their physical strength and skill. Things to climb on and balance on; things to jump from, games of all kinds, activities such as swimming and skating, and above all opportunities of using their hands to make things.

Thirdly they need social contacts with other children. This is now largely provided for by school so that a lonely child is now a rarity after the age of five although below that age the lack of nursery schools means that many children are deprived of the full companionship they need.

Finally they need facilities for make-believe games where they can play "mother and father," "school" or "gangsters." Fantasy is very strong in childhood and children often seem to live in a dream world of their own. We may suppose that just as the human embryo develops through the physical stages of man's ancestry so the child must live through earlier and simpler ways of life when men were hunters and lived in tents or caves, and when contact with nature was more vivid and direct than it is to-day.

All this may seem to be rather a lengthy preamble to a consideration of children's playgrounds but it is not really so. We must define children's needs before we can begin to satisfy them and the very process of definition makes the problem clearer.

In the first place it becomes obvious that when we are considering the provision of playgrounds in a particular city or town, we should make a survey of existing facilities and include in the survey not only existing parks and playgrounds but every aspect of the town which gives children opportunity for play.

For example, if there is an accessible harbour and a large area of heath, cliffs and woodland as at Bristol, the need for fantasy play will have been partly met for children living near enough; but where as at Southampton the harbour and docks are closed to children and the New Forest too far away for most of them to reach, then the need persists.

In the same way there may be good natural opportunities for physical activity such as swimming in the lakes and rivers of Stockholm, skating on the canals in Amsterdam, rock climbing and toboganing or even ski-ing in Edinburgh and canoeing in Berlin or Montreal.

Or the factories and workshops of a town may be interesting and partly accessible to children as in the still surviving "bottle" kilns of the Potteries, stonemason's yards, motor garages, sawmills or boat building yards.

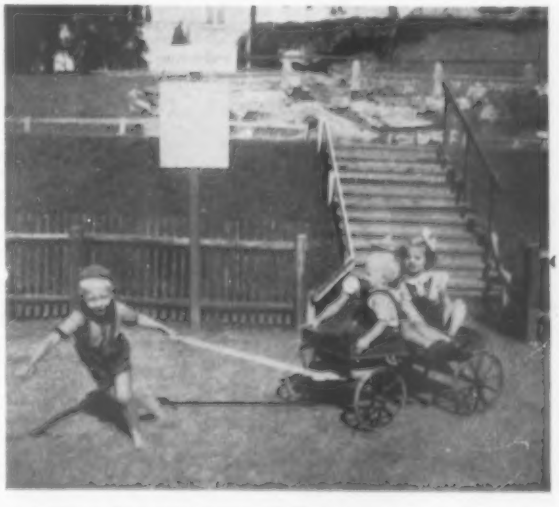
The thing to do when making such a survey is to imagine that one is a child again, and looking at the world afresh. Of course, it may be possible to enlist the aid of the children themselves either individually or through schools and ask them what interests them most in their towns.

After this survey of the existing situation the next step is to find out the number of children of different age groups in each street. This is apt to be a slow and laborious process if a house-to-house survey is undertaken, but as an alternative it is now generally possible to obtain from the Census authorities the number of children under fifteen years in each street block and also the total number of births in each year, so that the gross figure can be divided into the different age groups. This is desirable, as considerable fluctuations in the birth rate occurred during and after the war.

Armed with this information it is possible to plot on a map by a series of coloured dots or other methods the number of children to be provided for in each age group. The age groups suggested are 2-5, 5-7, 7-10, 10-13 and 13-15, but for simplicity the three middle groups can be treated as one.

Next it is necessary to decide how far children may be expected to walk to a playground. It has been generally assumed in the past that children of 2-5 should play within sight of their mothers and that older children will go up to a quarter of a mile. Playgrounds with special facilities may, however, draw children from a mile or more away. It is always possible to test these assumptions in a particular area by asking all the children in a playground at a particular time which street they come from, and plotting their homes on a map. It should be borne in mind that if playgrounds

CLIMBING. A dead tree in a playground in Stockholm. Suitable dead trees are surprisingly difficult to come by, but when found they make one of the best pieces of climbing apparatus.



"LETTING OFF STEAM" One of the quickest ways of getting tired is to pull one's pals around in a cart.

Playgrounds

are few and far between, the children will tend to travel farther to the few that there are.

In considering a particular system of playgrounds much depends on local conditions, such as the topography of the town, the density of population in the different neighbourhoods, the different sizes of playgrounds for which land can be provided, and so on.

It is instructive to compare a densely built-up town like Amsterdam with a more open town like Stockholm. Both have adequate playground systems, but the means adopted have been quite different in each case. In central Amsterdam there are very few open spaces which could be used for playgrounds, and it has been necessary to provide a few pieces of apparatus, such as a sandpit or horizontal bars, wherever a safe spot exists, such as a wide pavement, a culde-sac or an enclosed court.

In Stockholm, on the other hand, there was sufficient open land to provide a system of large parks and for each park to have its own playground. In one case the children have a few pieces of equipment practically on their doorstep: in the other they have to walk anything up to a quarter of a mile or more, but once they get there they have a very fully equipped playground at their disposal, complete with play leader.

In England our problem generally lies somewhere between these two extremes. Our towns are not as compact as central Amsterdam or as diffused as Stockholm. They contain a few playgrounds and the problem is to supplement the deficiencies of the existing schemes both in quantity and quality.

An adequate playground system should consist of three main types of playground in addition to playing fields.

(a) Many small sandpit playgrounds for toddlers up to five years. These should serve a maximum radius of 100 yards and the ideal is to have a small sandpit near every block of flats or group of houses.

(b) A smaller number of large playgrounds within a quarter of a mile of every child of the middle-age groups of 5-13. These should include not only a fitted playground but also a young children's corner, a large sandpit, a paddling pool, at least one area for ball games and a wild area for "camping."

(c) An even smaller number of adventure playgrounds within a quarter to three-quarters of a mile of every young adolescent (13-15+), where the children can build houses with bricks and old timber.

The first type of playground is so small that it can often be fitted into existing housing development. Even with asphalted courtyards a sandbox and a few seats can generally be fitted into a sunny corner. With new development sufficient sandpits should be provided as a matter of course as part of the housing layout by the housing authority. In addition to the sandpit there can be a few simple small pieces of apparatus, such as a small swing, a few logs or tree trunks, and a horizontal bar to swing on.

The playground should be carefully placed as far as possible away from ground-floor flats. It should have a low fence with a gate which can be latched on the outside so that children will not wander away. Part of the ground should be paved for wheeled toys.

The second type of playground, which is the playground proper, is a matter for the parks authority. Its detailed design will be considered later. For the moment we are only concerned with the amount of land which is needed.

Assuming that it serves a radius of a quarter of a mile, the number of children in the eight years of the middle-age groups from 5-13 will be about 12 per cent of the population. Young adolescents of 13-15 will be about 3 per cent. This gives the following totals of children to be expected with different densities of development:—

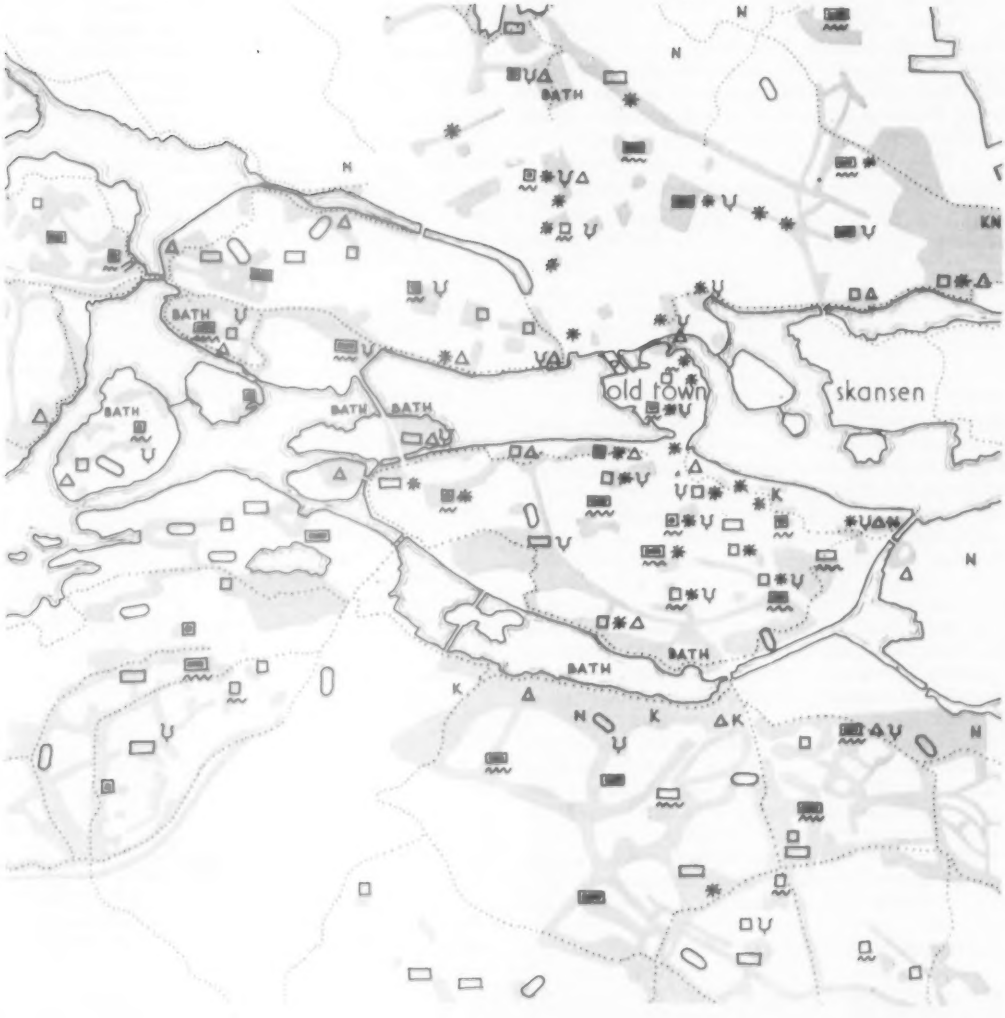
Density in persons/acre	Total population within ¼-mile radius	Children age 5-13	Young adolescents 13-15
150	22,500	2,700	675
100	15,000	1,800	450
50	7,500	900	225

It should be emphasized that these are only theoretical figures. The actual figures for any particular area must be obtained by actual survey, as there will be considerable variation between different neighbourhoods.

There are no generally accepted standards of playground

MAKE BELIEVE. *Living with one's squaw in a home-made hut, one of the many in the Emdrup adventure playground in Copenhagen.*

SOCIAL CONTACTS. *Having tea with one's friends is a very satisfactory way of spending a hot afternoon.*



KEY

- PLAYGROUND
- PLAYGROUND WITH PLAY LEADER
- BALL GAMES
- BALL GAMES AND PLAY LEADER
- PADDLING POOL FOR CHILDREN
- BATH OPEN AIR BATH
- FLOWER ARRANGEMENTS
- OPEN AIR MUSIC
- VIEWPOINT
- N NATURE RESERVE
- K HISTORICAL MONUMENT
- FOOTPATH
- ATHLETICS GROUND (FREE)

The Parks system of central Stockholm. Stockholm is exceptionally well provided with open spaces of all kinds, lakes, belts of natural landscape and parkland, the Skansen peninsula with its open-air zoo and folk museum and its deer park, the green wedges running through the newer neighbourhoods, the lakeside walks and the formal town parks. And the children have not been forgotten. Each of the larger parks has a splendidly equipped playground with sandpits for the younger children, large areas for ball games, a group of swings and other fittings, and plenty of things to climb on including old tower play sculpture, tree trunks and branches. The playgrounds are shown with a square. Scale approx. 1 : 70,000.

Playgrounds

provision, but we may assume 100 sq ft per child as a minimum. This agrees fairly well with the Scandinavian standard of 10 square metres per child and the standards recommended in the N.P.F.A. pamphlet, "Playgrounds for Blocks of Flats." These are 4 sq yd for 2-5 years; 10 sq yd for 5-10 years, and 15 sq yd for 9-15 years.

Assuming this standard of 100 sq ft per child for the 5-13 age groups, we get the following acreages which are needed for ordinary playgrounds exclusive of toddlers' play spaces, playing fields and adventure playgrounds for young adolescents:—

Density in persons/acre	Children age 5-13	Total acreage needed for playgrounds
150	2,700	6 acres
100	1,800	4 acres
50	900	2 acres

This represents 0.27 acres per 1,000 population (including adults). It is obvious that while there may be no great difficulty in finding sites in the 50-density zone it will become very difficult in the 100-density zone and may be frankly impossible in the 150-density zones. Fortunately, very few areas of such high density exist in this country, and of these some are being demolished and redeveloped at lower densities.

In the denser areas the solution may be to provide really large playgrounds in the public parks and supplement these with smaller playgrounds wherever sites can be found. It may be possible, for example, to use cleared sites on a temporary basis, with apparatus which can be moved to an other site when necessary.

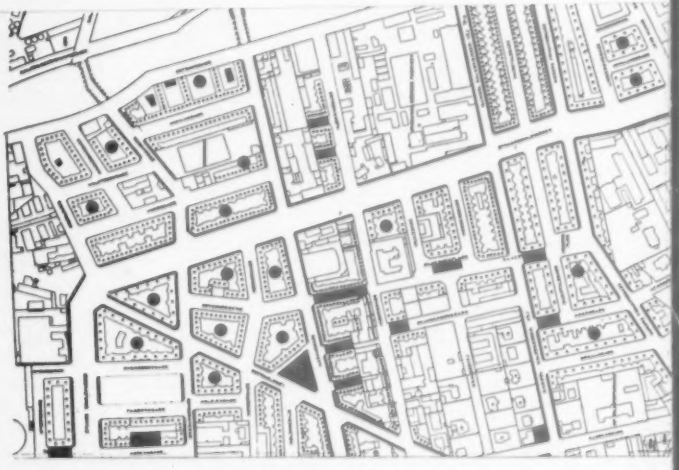
With the medium and lower density areas, however, it is often better to divide the acreage into smaller and more accessible playgrounds. Two acres is large enough to give ample scope for a very wide range of activities, and two playgrounds of two acres with differing characters and types of equipment may give more pleasure than one large playground of four acres. There is also the practical consideration that sites of two acres and less are easier to find than larger sites.

Finally, we come to the adventure playgrounds for young adolescents. These hardly exist as yet in this country, and yet in Copenhagen and Stockholm half a dozen or more have been built since the war. Initially they were built to help solve the problem of child delinquency in a positive way by giving free opportunity for constructive play with real building materials. They have been outstandingly successful (see "Adventure Playgrounds," by Lady Allen of Hurtwood, published by the National Playing Fields Association), and there seem to be no reason why they should not be provided on a wide scale in the future.

We saw that at a density of 100 persons/acre there will be about 450 adolescents of 13-15 every ¼-mile radius.

The two best-known adventure playgrounds, that at Emdrup at Copenhagen and the "Yard" at Minneapolis, are 1½ acres and 1⅓ acres respectively, and accommodate 200 and 400 children. This size has proved to be about right in practice, but probably anything between 1 and 2 acres would serve as well.

This type of playground is extremely popular, and it is difficult to estimate the number which could usefully be provided. Although the older children are the main "clients," younger children to 6 or 7 come along, too. An empirical basis would be to provide, 1-2-acre site for every half-mile radius. This would be in the ratio of 1 : 4 with the conventional playground. The indications are that this would be too few for the demand.



Above: One of the older parts of Copenhagen which is densely developed and has virtually no open spaces within easy reach of young children, although there are several fine parks farther away which older children can walk to. The dots represent children under 7 years of age. Streets with a dangerous volume of traffic are outlined. The spots and triangles represent existing or proposed small playgrounds sited either in courts between blocks of flats, "cul-de-sacs" or "play streets" closed to traffic.

Scale approx. 1 : 8,000

Left: A sieve map of Copenhagen. The single hatching represents industrial and commercial areas where no playgrounds are needed. The cross hatching represents areas already sufficiently provided for, while the unhatched parts are areas still deficient in playgrounds. Roads with a dangerous volume of traffic are shown and it is assumed that no child should have to cross one of these to reach a playground.

Scale approx. 1 : 90,000

Conference Paper Discussion (Continued from page 685)

was the use of the patent glazing technique which was unknown in America, but which had special points of importance, because it accepted the water and canalized it, and then rejected it from the system.

Among the samples of materials which were used to illustrate the opening of the paper, were stove enamelled glass which is now in an experimental stage and the stone cladding of sheet metal. Other sheet materials referred to were glass laminates and stove enamelled sheet. The speaker suggested that if a contemporary building with light weight cladding was to remain in a good and attractive condition, then provision must be made for cleaning the surface of the building, and this must be considered in the design stage of the job. The Lever Building in New York with its well designed cleaning gantry was quoted as a good example. Before dealing with the slides, the President handed Mr. Allen a letter received from a local resident complaining that architects do not give enough attention to the design of chimney flues. This interested Mr. Allen as a scientist, and he suggested that architects might pay more attention to this matter, and noted with interest that the writer of the letter described himself as a "flueologist." Both speakers commented on the black-and-white and colour slides as on the previous day, and these included L.C.C. schools using patent glazing as curtain walls, varying forms of concrete construction, including box frame. Several systems of prefabrication were also illustrated together with details of the Ministry of Education's experimental schools, and a new concrete floor system from Scotland. Colour pictures were shown of the United Nations building, Lever Building, Johnson Wax, and Lake Shore Drive by Mies Van der Rohe, where it was pointed out that this was not merely a matter of erecting a steel frame and giving it a coat of Bitumen to preserve the appearance of the building. For the drawings in the Exhibition would show the tremendous amount of research and details which went into the production of this very simple building. The paint on the steel work was special Bituminous paint made for the U.S.A. Navy and 17 coats were applied. Following the slides, Mr. Allen dealt with the rest of the paper and stated that the need for to-day was for a flexible system whereby the provision as a whole was a good design which could be used for the ordinary run of buildings. One of the reasons why to-day's costs were high at the moment is the tendency to develop too much ingenious detail which makes each job a special one. The unique feature of post-war building has been the development of the prefabrication technique, and in this, Great Britain is ahead of the world both in speed and cost. Of particular importance is the good standard of design found in most of the prefabrication systems, and engineering and scientific firms are going well ahead. Other firms in the building industry, however, tend to drop behind in the race for development. The clay industry is a good example of this where there has been no real development in clay products, perhaps because there is a sellers' market at the moment in these materials. The discussion in the earlier part of the Conference had already been with architects concerned with the type of bricks they were using. One of the points which worried Mr. Allen was whether we were getting the right training in industry. Whether we were getting craftsmen who were capable of doing good work using the new materials and techniques which we were devising. It is obvious that we are becoming increasingly dependent as architects on higher grade technology which means not craftsmanship so much as the ability to think and understand from first principles. Are we training our architectural students the right way? How well are we preparing our students in terms of what we were discussing at the Conference? The question of post-graduate training was also a vital point. We have, in fact, no post-graduate schools nearer to the heart of architecture than town planning. The architectural profession must give the lead in all these matters both individually and as a profession. The future of buildings in this country depends on the way in which the profession and industry can work together. He quoted, to conclude, from Letharbay's essay on the Architect of Adventure, "the only person free to innovate is the person with a clear understanding of what he was departing from."

Discussion on Techniques

The second day's discussion was opened by Mr. C. S. Mardall with a plea for better site organization, and he suggested that a dirty untidy site generally meant a badly organized job. He was also concerned with the quality of materials and suggested a Good Housekeping Institute type of certificate which should be awarded by an independent body for materials which were good in themselves and were supported by adequate technical information. One or two of the speakers following suggested that these new techniques were too risky to try, particularly as they were using other people's money. The reply to this was generally agreed to be seen in the advantages that these new techniques could give. Lightweight cladding means a reduction in the steel or concrete framing, a reduction in foundation.

Contemporary techniques, whilst it would cost money, pointed out Mr. Mills, could also produce compensations which were truly worth while.

Although the Conference was not considering housing as such, Mr. G. L. Greaves raised the question of the low standard of design and construction on much of the new housing. The structure was generally conservative but effective; when the builder had been persuaded to try new ideas he became enthusiastic for them. Mr. Howard Lobb referred to the question of double glazing, a matter of great importance in the consideration of fuel economy, and referred to the Pilkington research committee who were looking into the question of double glazing. He appealed to members of the Conference to send information to him. Mr. Cooke-Yarborough invented a new twentieth-century proverb, "The architect who builds glass houses should not drop bricks," and questioned Mr. Mills' remarks about patent glazing as a curtain wall technique. He did not think it was going to be as easy as that. Mr. Allen, however, replied that the point was that the patent glazing technique had the greatest hope of success, because of the training which Mr. Mills had referred to earlier. The Scottish speaker suggested that a great deal of trouble which was experienced south of the border was not general in the north. Air pollution was not general. A great deal of electrical heating was used there because of the hydro-electric system giving cheaper electricity and Scottish traditional renderings such as the lime harl, eliminates the problems of cracking in rendering. Mr. Allen queried the cost of electric floor heating, and Mr. Blackburn, of the Royal Burgh of Inverness, said that he would provide more information. Other Scottish representatives dealt with the use of no-fines concrete and lightweight stresses which were being used for high blocks and which they concluded was the cheapest form of construction at the present moment. It was also suggested that no-fines buildings had fewer acoustics problems than lightweight concretes. To this Mr. Allen replied that no-fines wall was roughly the same value as a 9in brick wall, and that the B.R.S. was doing a great deal of work at the moment finding out how people felt about sound transmission. It was interesting to find that people of different levels required different standards of insulation.

Mr. C. S. White commented on the new byelaws and

their interpretation by local authorities which varied from place to place. He said that architects could use softwoods more intelligently now that they were in plentiful supply, and asked for some comments on the small prestressed concrete members being used by the Ministry of Education on their latest school. He also thought much more could be done by using suspended ceilings. In reply, Mr. Mills agreed that the ultimate points regarding byelaws all depend on those who interpret them.

In relation to suspended ceilings, he felt that the economics of them would probably show very little additional cost over normal ceiling construction, particularly when you bear in mind the ultimate value in relation to maintenance and repair and the fact that the suspended ceilings make a very useful duct for services, etc. In reply to Mr. White's point about the prestressed concrete members, Anthony Pott said that small prestressed members should be regarded in the same way as steel members rather than concrete ones, and although they had some difficulty in the beginning, they now found that distortion in these small members was not serious. Mr. Pott also regretted the lack of discussion on lightweight concretes and felt that these materials had numerous possibilities, but that they were being developed far too slowly. His real point, however, was in relation to mastics, which the authors had both referred to in the earlier part of the proceedings. The authors agreed that the information needed was not available at the moment, and that more research must be carried on into the problem of mastic which does not harden with time. They also felt that as an alternative the use of rubber extrusions such as those used by Saarinen on the General Motors building might have possibilities.

Above : The Tithe Barn (left) and main entrance (right), Torre Abbey. During the Conference an Exhibition arranged by the Devon and Cornwall Society of Architects was on view in the former. Blue prints of American curtain walling and materials were exhibited and this part of the Exhibition might well be shown somewhere in London. Students have something to learn from the elaborate detailing of such apparently simple buildings as Mies Van der Rohe's Lake Shore Drive Flats.

Materials & Techniques

Part IV. The Broader Picture. From the Paper read at the British Architects Conference at Torquay, by W. A. Allen & Edward D. Mills

YOU cannot prepare a review of this kind without having aroused in your mind views and ideas which set the details in some sort of perspective, and in this final part of our paper we are putting down some of those that seem to us to be important for the profession to be clear about.

* * *

One cannot help being struck by the fact that far more initiative and far more inventiveness is being shown in construction than in materials, and that on the material side the outlook is better in the non-traditional than in the traditional fields. The makers of traditional materials supply the wherewithal for a great bulk of our building programme, and we cannot view any lack of initiative here without great concern.

On the face of it the distinction seems to be between those industries where modern science, engineering and technology are allowed to play their part, and those where we see too little evidence of it. A disappointing spot seems to be just where we are entitled to expect the most responsible approach, namely, in the clay industries, because they are so important. It is not only that we find so few signs of interest in seeing if there are new ways they can serve modern building, but the costs often seem definitely high, though some parts of the industry are, of course, very efficient. Improvements should be possible, and we should see a better range of products.

Perhaps the fundamental trouble is that brickwork is still substantially unchallenged on overall cost, but if this is the reason it is not one that we can accept as a justification for any easy view of the situation.

* * *

Among the dangers in writing a paper of this kind is that of creating an impression that somehow everything is wrong at home and everything is right elsewhere. Possibly this particular paper suggests that Americans or continental people are more active in innovation than we, and perhaps this is the case; but the authors do not set out to suggest it, because it is largely irrelevant, and in any case the evidence would have to be far more complete than they can muster at the moment. The fact is that in some spheres Britain leads, as in prefabrication, while in other branches other countries are ahead. One draws a pattern of light and shade at home, but abroad only the highlights attract us. The point is not to worry about the comparison, but to concentrate on anything useful that anybody has to teach and

Materials and Techniques

on getting any of our backward industries to move forward.

In much the same vein, it is easy to create an overall impression that the building industry, and especially the materials side, gives a faulty service. We may see shortcomings that we feel ought to be corrected, but in all fairness we must remember that so far as things going wrong are concerned, more troubles are due to misuse than to poor manufacture. We must be as careful to search for faults in ourselves as in others; indeed self-examination should come first so that the other may have more justification.

It is easily possible, too, to leave an unintended feeling in this kind of paper that research is inadequate or insufficiently used. Most of those who are in research realize the need for expansion of it, and for better reception and development mechanisms in industry; but let it be very clearly understood at the same time that in costing, mechanization, management, structural design, and materials development, to mention only some of the fields we have discussed, the fact that we can see the situation clearly now, and are on the march—often a long way forward—is due more to research and attendant development than to any other single factor, excepting perhaps economic motives.

The development that gives uniqueness to British post-war building is the growth of high quality, large-scale prefabrication. In no other country of the world is anything comparable to be seen. It is successful, its costs are not unreasonable at present, it offers savings in time and great convenience, with controlled quality and architectural elegance. If costs of traditional work drop, as they can be made to do, then prefabrication may have a harder time; but it is in its infancy, and no doubt can look forward with some confidence to holding a competitive position as it develops bigger markets and higher efficiencies.

One cannot help asking what place we are going to give it in our daily work, but this then begs one or two still wider questions that we ought to ask ourselves about techniques. We have all noticed the strain of getting things built since the war; almost every building seems a struggle to make the industry meet our demands in design. Partly it is due to shortages, but it is also partly due to our inability to settle down yet with an accepted common grammar of modern conventional building, and work within it. We are in a highly creative period of design where we seek originality at every turn. The difficulty seemingly is that we then demand more of our industry than it is organized to deliver, and this presumably is the cause of some of the strain.

Perhaps we ought to ask ourselves if we should not try to do as the Scandinavians have done—refine and keep simple our conventional building for day-to-day purposes; then add to it our growing repertoire of good prefabrication for the same categories of buildings, making as it were one stratum of low-cost, mass-produced, easily assembled, good quality "goods"; and finally thus reserving a more proportionate effort to go into the high-grade "one-off" design. It is a curious twist of fate that the originality which is the obvious merit of so many of to-day's British architects is at the same time one of the barriers to refinement, ease and simplicity of design and construction. We must remember that all the architectural innovation of recent years has not reduced building costs, but has, if anything, increased them. The one place where this generalization does not hold is in the schools programme, where operational research has shown us the way to economical planning. This is an idea capable of much development in the profession.

* * *

The success of current prefabrication really derives from the successful introduction of the idea of development teams, where you combine architects, users, cost people, engineers, perhaps a specialist or two, to work with or in industry to bring into existence economical, sound, elegant new ways of combining new or existing building resources. It is the combined thinking and design power, and the kind of operational research approach that goes with it which yield the results. It is a new technique for us as architects, and it is a very valuable tool for shaping the industry to our needs. Even on its present scale it has served us well, and we must cultivate it in the profession until we feel it has given us all we can get out of it.

The London County Council has made an interesting new attack on flats along these lines, combining a nominated contractor, a consulting engineer, the Building Research Station, and a special group of its own architects. They have a substantial scheme to carry out, and are attacking through a thorough preliminary cost analysis of alternatives. The timetable does not permit a great deal of development work before the first buildings go on the ground, but a sustained attack by this method cannot fail to show good results before long. If the people are right, the method gives the power. The field before us for study in this way is very wide.

* * *

We have been somewhat critical here of what seems to be backwardness in the making of the traditional materials, but we must not forget to consider whether we are served well on the assembly side. Unquestionably organization in the big firms is improving, and we can expect this to spread slowly down the ranks of builders; but are we quite happy about the training of labour? We can see clearly that we are increasingly dependent on higher grade technology, which means not craftsmanship so much as the ability to think and understand from first principles. Roofings, wall facings, painting, concrete work, brickwork, prefabrication, all bring us face to face with the ability or inability of the man doing the job to analyse correctly in novel situations. Is the training right, and is it having results that satisfy us? These people, in the end, are our agents, and it is up to us to satisfy ourselves about their quality and capacity.

* * *

And then, in the end, we must look at ourselves and ask some of the same questions. How well are we preparing our students in terms of what we are discussing here? Are we really working at the right level in education when we cannot claim a single post-graduate school in subjects nearer to the heart of architecture than town-planning? And do we older members of the profession have yet the right technique of keeping ourselves alive to modern problems, and in control of the situation?

These are matters that seem to need some discussion.

Away back in the first years of this century, when reinforced concrete was new, the Institute took the responsibility for convening a Committee with Sir H. Tanner (F.), President also of the Concrete Institute, as Chairman, to look after the development of it along sound lines.

We may think this now an unusual R.I.B.A. job, but is this sort of thing not still necessary to-day from us, and would it not be wise of us to consider afresh some way in which we can once again, as a profession, bring our influence directly to bear upon the trend of technical development in the Industry? For example, are we wholly fair in criticizing some part of it for not producing what we want if we do not give voice to our needs? We cannot have development teams everywhere, though basically this is one of the best means to action. Alongside it, a suitable Institute mechanism might be the symposium, actively used, backed up when it seems results can thus be obtained by suitable committees with the industries concerned. We have isolated in this paper some questions that might be handled this way, and no doubt plenty more will appear if we once start thinking this way. Perhaps the Institute's Science Committee can step into this field with the surest tread of any of us.

It is, of course, once again the problem of an attitude of mind, and in these days, when it is becoming fashionable to look again at some of the things W. R. Lethaby used to say, it is worth recalling his essay on the "Architecture of Adventure" which he claimed was an architecture with science in the making of it. By this he meant that the only person really free to innovate was the person with a clear understanding of what he was departing from.

Whether it is for the purpose of finding and breaking truly new ground in design, or of seeing afresh the way to handle the old, the only way to manage to-day is by thorough understanding.

BUILDING CONSTRUCTION

Are Students Receiving Adequate Training in This Important Subject? If Not, Who is to Blame—the Schools, the Students or the Practising Architect?

MANY practising architects look upon students who have just completed their final year as of little use for the first year in an office. You hear the remark that the only thing they can do is to design buildings, the like of which it is very rarely the lot of a private architect to be called upon to execute. "If the schools would only teach the students how to construct simple buildings, buildings they might be called upon to build, they might be of some use," appears to be the usual comment.

The criticism may be a little unfair, and I have no doubt the Heads of Schools of Architecture will rush into print to defend their method of teaching. I do not, however, believe it is purely prejudice of the older generation against the school-trained architects that gives rise to the criticism; I believe there must be a grain of truth in the remarks.

Is the schools' curriculum evenly balanced so far as the various facets of architecture are concerned? Are some subjects dismissed as below the dignity of the schools to teach? Let me be honest and say that, as far as I can ascertain from students, design is the one subject which is emphasized from the day one enters school till one receives the diploma. Looking round the towns and countryside, this may not be a bad thing—a much-needed improvement is called for. In a private practice, however, design occupies only a small part of an architect's time. I would say that an equal, if not greater, amount of time is spent on construction. Do the schools realize this fact or are they still labouring under the illusion that construction should be left to those unfortunate assistants who have never been to architectural schools and have not qualified? Many of these assistants, who through no fault of their own, have never been to a school, are the salt of a small office. Construction is often their strong point because they have made it their business to learn how a building should be constructed. They have learned the hard way but the only way; not from books and lectures, but from actual experience of seeing buildings constructed, by asking the why and wherefore from men who matter, the men who actually have to construct the building.

I have little doubt that these assistants would be the first to admit their powers of design are limited. Can this gap between the school-trained assistant, who is excellent at design, and the untrained, who is good at construction, be lessened, so that the criticism that the former is of no use for his first year in the office becomes a thing of the past?

The first question to ask, then, is: Do the schools pay sufficient attention to the subject of practical construction? This will no doubt vary from school to school, but I feel the answer most students would give (they make very good critics) would be "No."

I would make a plea for the schools to devote far more time to a comprehensive course in specification and quantities. If a student was asked to prepare a bill of quantities, even for a small private garage, he would soon find that before he could adequately take off his bill he would have to know both his materials and his drawing. He would, in fact, have to get down to really basic construction.

Are students interested in construction? The answer, I am sorry to say, I believe is again "No." There are, no doubt, exceptions to this. If there are not, all I can say is that there should be. Is it their fault or does the fault lie with their studio masters? Or does the fault lie partly with the practising architect?

Let us consider first the question of the schools and their studio masters. It would appear that one of the aims of a school is to be able to state at the annual prize-giving that they were successful in winning such-and-such a design prize. A laudable aim but it appears to place design on an unduly high pedestal. The whole curriculum is subservient to that god "Design." If any school wishes to take me up on this point, I would ask them, before they do so, how many students they persuaded last year to enter for the Grizzel prize. I would go so far as to ask how many have they ever? This prize appears to be shunned by the schools in favour of Tite, Soane, Victory and Rome. I suppose it must be frowned upon as not being in the same class and not carrying the same prestige value. I would ask, prestige with whom? The winning of a construction prize would, I feel sure, carry considerable weight with a private practitioner at an interview for an appointment. This point does not appear to have been appreciated by the schools.

Do the schools appreciate the importance of construction to the client? I doubt it. Whilst you, as his architect, may take infinite pains to see that the planning and design of your client's house do both you and your client justice, it will, in the end, be the construction by which your quality will be judged. The average householder is not design conscious. One has only to inspect any suburbia to realize this; but he is definitely interested and affected as regards how it works. If damp spots show, a leak appears in the joint between water tank and connection, a water system does not heat, rain blows under a window, or other simple things go wrong, you will be condemned as an architect. They are important to the client, hence the importance of really good, sound construction being taught in schools.

Why this lack of interest in construction at schools? Is it a dull subject to teach? Personally, it is a subject which I feel is full of interest. A subject full of practical problems which calls for ingenuity in solving. Do the schools make the subject interesting? Do they impress upon students the importance of being able to translate a building from the design stage right through to full-size details?

One of the best ways of learning construction is to see it in actual practice, to see it on the site. I believe most schools organize periodic visits to buildings under construction. The operative word in that sentence is periodic. I hear they are apt to be infrequent. In addition, when they are organized, the party of students is often too large for the Clerk of Works or person explaining the building to be able to do justice to so large an audience.

I would suggest that a studio master who has a real interest in construction, if one is to be found in the school, should be delegated to organize the tours and make suitable arrangements both within and outwith the school hours for buildings in the locality to be inspected during their erection.

One cannot hold the students blameless for this lack of interest in this branch of their education. How many, I wonder, seek permission from an architect to wander over a building during its construction? How many wander of their own accord, without permission? I can hear a few saying they do, but do they do it systematically from commencement to finish at regular intervals so as to appreciate the finer points which can only be seen by a real close study? How many make notes as they walk round? How many borrow a specification and quantities and study the building from these angles?

Instead of being critical of students' lack of knowledge of construction, would it not be better if architects in private practice considered first if they could assist in remedying to a certain extent this fault? If your practice lies within an area of a school of architecture, why not inform the school of a building or buildings, which you feel

Nissen-hut canteen

TRANSFORMED WITH Accotile FLOORING!*

SOMEWHERE IN ENGLAND some fortunate Allied Servicemen relax from duty in these pleasant surroundings. Yet the exterior gives no indication of the colourful "decor" inside —for the building is a plain Nissen hut!

Accotile helped in this amazing transformation. For when you have a choice of 22 colours in 12" x 12" or 9" x 9" tiles you can permutate the design possibilities almost to infinity. And when this colour range is allied to hard-wearing qualities, ease of maintenance and speed of laying you can understand why Accotile was "called up" for service! This floor will last longer than its need, show less marks than most other surfaces and be unaffected by moisture even if laid over concrete direct on earth.

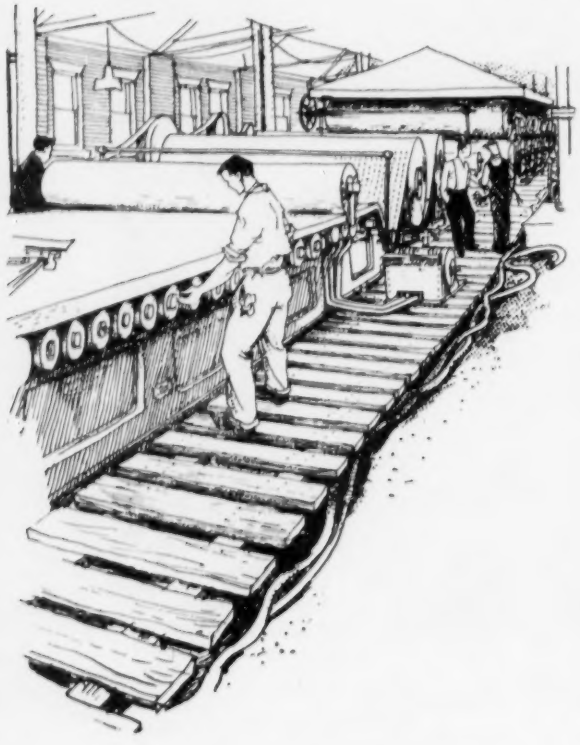
Accotile is laid only by Armstrong Cork Co. Ltd., or approved Specialist Contractors from over 90 branches and Depots throughout the country. Full informative literature gladly sent on request.

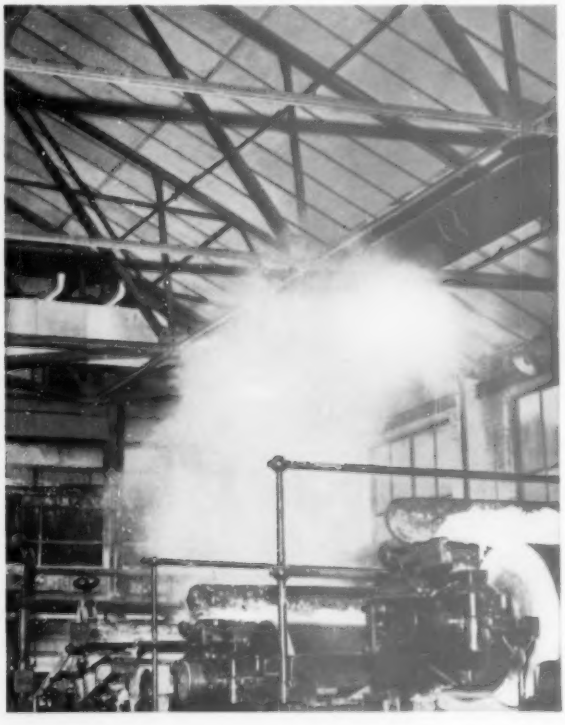
* *British Registered Trade Mark 663698, Armstrong Cork Company Limited, Registered Users.*

ACCOTILE IS RIGHT FOR DOMESTIC INTERIORS, TOO! as this model kitchen designed by "Modern Woman" shows. The colourful, durable surface, so easily cleaned, is a joy to the most houseproud woman. With personal designs and colour harmonies for each room, Accotile can be laid right through the house.

ARMSTRONG CORK COMPANY LTD. *Flooring Dept.*, BUSH HOUSE, ALDWYCH, W.C.2.
Telephone: CHAncery 6281

"the place is full of steam...





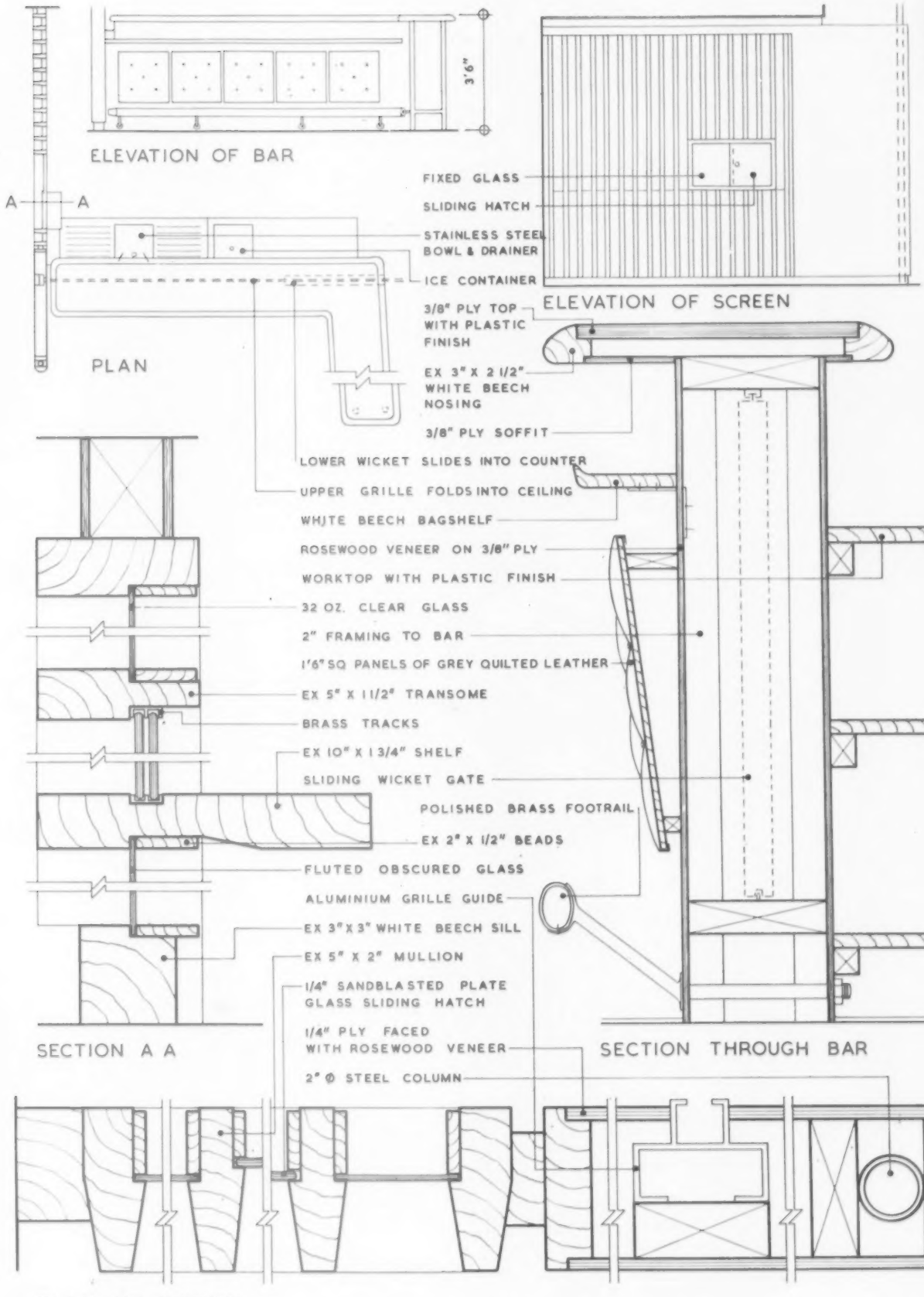
. . . "The place is full of steam all day"—they told us at Cray Valley Paper Mills—"and dries out again at night. We can't have water dripping off the ceiling on to the machines." The ceiling, in other words, had to stand unlimited absorption and drying-out. It also had to be fire-proof, and to last indefinitely. A clear case for "Asbestolux", in fact. Time, humidity, heat, cold, chemicals, fungi, none of them can affect "Asbestolux", a silica-bonded pure asbestos board, which is made without cement. As for fire-resistance, a recent public test showed "Asbestolux" sheet standing up to a 1800°F flame for 13 days, 10 hours a day, without there being even the first sign of structural failure.

ASBESTOLUX

INCOMBUSTIBLE ASBESTOS INSULATION BOARD

THE CAPE ASBESTOS CO. LTD., 114-116 Park St., London W.1 *Telephone: GRO 6022*

CAPE



SCALES 1/4"=1'0", 1 1/2"=1'0" & QUARTER FULL SIZE

COCKTAIL BAR, GRAND HOTEL, BIRMINGHAM

DESIGNERS: DOUGLAS JONES & DENYS HINTON

might be of interest from the constructional angle, that they could inspect during construction, subject to no compensation being claimed if any student had an accident? Suggest to the school that annotated notes be made on the visit and offer a prize of, say, a book for the best set of notes. Why not attend yourself at one of the visits and ask for questions, as well as explaining the whys and wherefores of your construction?

Do we, as practising architects, take sufficient interest in the work of students during their school years, or do we just grouse? I feel that the whole subject of construction might, with advantage, be considered carefully both by the schools and architects, to see if the students are receiving the training they really require in this important subject. Likewise, the students themselves could do a lot more to learn at first hand this most interesting branch of their studies.

M. E. TAYLOR.

Urinals

I WAS rather surprised when visiting a recently completed school to see that, in the sanitary blocks, bowl-type urinals fixed to the walls had been used. I have always found Sanitary Authorities to be of the opinion that this type of urinal fitting is the least desirable from the hygienic aspect and in consequence they are usually selected as a very last resort when it has been found impossible to install either of the other varieties. This disapproval is usually expressed particularly strongly when bowl fittings are intended for the use of children. It is true that bowl types appear to be the cheapest but they are not easy to install satisfactorily in situations liable to rough usage, and in addition they need a great deal of piping and many traps for proper installation. It is true that this type overcomes certain difficulties involved by the use of floor channels, which often tend to need traps projecting through floors, when urinals are installed on upper floors but when, as in this case, the installation is at ground level, these difficulties do not arise. In any case a floor channel is often necessary to permit the floor of the whole apartment in which the urinals are fixed to be swilled with water for cleaning purposes.

Wall fixed bowl types need extremely secure fixings especially when there is a risk that the boys, who may weigh quite a lot, may stand on them in play; furthermore, activities of this nature can have disastrous effects on the length of waste-pipe exposed between the fittings. They require to be installed against wall tiling or similar impervious wall coverings, part of which is covered by the fitting itself and therefore wasted, or alternatively the wall coverings have to be, often at considerable cost, fitted round rather difficult shapes. Sometimes bowl urinals are installed with untrapped waste-pipes delivering into floor channels, but most Sanitary Authorities view this type of installation as being undesirable while the total financial gain is very small compared with the use of other types.

The alternative types are: first, stall urinals and secondly, slab urinals, the latter being of two general types, namely, with or without partitions or divisions. While stall types are the more costly they are very definitely to be preferred from almost every other point. The cost, which seems high if considered only from the aspect of the builders' merchants quotation, is really not so high when considered from the aspect of the total cost of the fittings plus the builder's work and the plumber's costs, as these are much less than for any other type, except the plain slabs. I feel sure that the cost of stall types could be lowered if they were more widely used and therefore produced in greater quantity. An excellent type is shown in BS/MOE 1-7.

Slab types with divisions are often difficult to install because they need very careful building-in, since the divisions are carried into the back wall; in addition, good back walls are necessary as they have to support the weight of the division. On hygienic grounds slab types, both with, and even more without, divisions, are less good than the stall types, owing to the need for joints on the wall surfaces. The stall-type fittings have all their joints, except those in the channel, well away from the usable and the flushed surfaces.

Most urinals used in this country, of whatever type, are made from fireclay, although a few have been made in "heavy" earthenware, especially when of the bowl type, and some in vitreous china, a material which is quite widely used in some other countries. Some slab urinals have been made in materials such as slate, cement rendering and terrazzo, but I do not believe that any of these can be considered as sufficiently non-absorbent to be in any way equal, from the hygienic aspect, to ceramic materials since these are fired at very high temperatures, thus producing glass-like surfaces easily and adequately cleaned by the normal flushing. Floor channels are sometimes separate from stall backs but they are certainly more hygienic if the whole stall and channel is in one piece without a joint at the junction of the slab and the channel itself at a point which is very vulnerable to moisture penetration.

I have thought it is very desirable when selecting slab urinals to choose those with sloping backs, as these spread the flushing water so much better than do the vertical types. Slab types are normally made in 2ft wide sections with special end sections which have return corners in one piece with the back of the section. Slab types having divisions as part of the slab often have the joint between sections in the centre of each standing, which seems to be a bad position, but possibly less vulnerable to damp penetration than when loose divisions are used with the joint against the division. Slab types present the same difficulties of installation of the trap to the channel.

I have found from experience that stalls or slabs should be at least 3ft 6in high from the normal floor level; they are generally in 24in wide units but 18in × 21in wide units are also available. The 18in size is really too small for adults except when a single isolated stall is required but they are excellent for younger children.

It is very desirable to install a well-designed floor tread laid flush with the upper surfaces of the normal flooring materials to drain into the channel. The best materials for floor treads seem to be either fireclay or black granite.

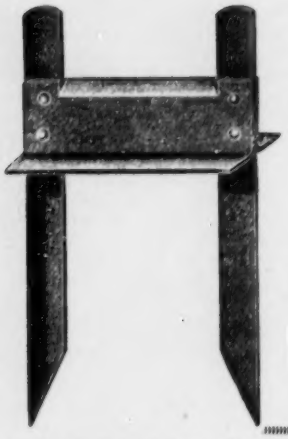
A point worth noting in connection with the metal work of the flushing pipes and spreaders when these are made of brass or copper is to have them brightly polished or nickel plated as of all the normal plated finishes nickel stands up to the conditions better than the others. The nickel coating, however, needs to be very good and not less than that required for "hard endure" conditions, as specified in B.S.1224. Any non-ferrous pipes and fittings should be heavily galvanized or, better, vitreous enamelled, as galvanizing leaves a rough surface for easy cleaning.

Great care should be taken in the selection of pipe clips and also the method of fixing spreaders, especially in schools, industrial buildings, public houses and public conveniences where they appear to receive extremely rough treatment and in consequence quickly become loose if they are not very well secured. Spreaders are best fixed if the feed pipe is brought through the ware from the back, but if they are not treated in this way they should be bolted into place through the ware.

While regrettably there is no B.S. for urinals for use in industrial or public buildings, the section in BS/MOE 1-7 referred to previously, which is part of a special series of fittings for schools, covers fireclay stall urinals, which are perfectly satisfactory for use in other types of building. I think that B.S.I. should take two actions on this subject of urinals, first to include slab types and probably also bowl types for use where the other types are difficult or impossible to install, as for example in existing buildings; the second action would be to publish a B.S. as a standard for urinals generally without the specific reference to school uses, since there is a considerable demand for industrial premises. Urinals seem to be a subject which might well be met by a very limited number of standard designs which could be mass-produced and by this means it might be possible to make the more hygienic but costly types more competitive.

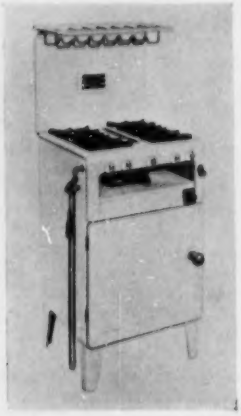
DUTCH UNCLE

MOSAICS



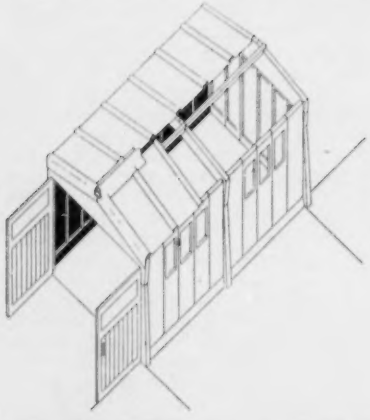
FITTINGS
MISCELLANEOUS
C11/5

A steel Foot Scraper by Vulcan Manufacturing (Wolverhampton) Ltd., of New Griffin Works, Wolverhampton, which is supplied either stoved in black or galvanized finish. Overall size 7in wide by 14¼in long, the scraper is 4¼in wide by 2¼in deep with two 5¼in flaps, one on either side. The Scraper is 18 gauge steel, the legs are in 12 gauge riveted together.



FITTINGS
GAS COOKER
C6/10

The latest addition to the New World Series of Gas Cookers by Radiation Ltd., of Radiation House, Stratford Place, London, W.1, known as the No. S.4183. The price is approximately £23 12s 6d; it has a four burner hot plate, grill, large oven and safety type gas taps on the boiling burners, all with a simmering position. The splash back has a flue in the centre and a large warming rack at the top for plates.



STRUCTURE
MISCELLANEOUS
A12/2

The new Marley range of portable garages and buildings have been specially designed for easy erection at a minimum cost by unskilled labour. Made of high grade reinforced concrete with asbestos cement roofing, they are fire, rot and vermin proof. All necessary components including glass are supplied for assembly on a level and firm foundation. The self bracing panels bolt quickly together. Made by Surrey Concrete Ltd., Peasmarsh, Guildford, Surrey.

FITTINGS
DOOR
FURNITURE
C3/9

Stainless Developments Ltd., 65 East Barnet Road, New Barnet, Herts., have produced a new range of stainless steel door furniture, the Postal Letter Plate illustrated is an example. Overall size is 12in by 5in with an aperture of 1¼in, the range includes Finger Plates, Escutcheons, Cylinder Lock Covers, Door Handles and so on. They have a polished mirror finish. The retail price of the Postal Letter Plate is 30s.

INDUSTRIAL NOTES

● The Council of the Federation of Associations of Specialists and Sub-Contractors announces that the Architectural Metal Craftsmen's Association has taken up Associate Membership of the Federation.

● The Incorporated Institute of British Decorators, founded in 1899 for the promotion and the advancement of the Practice and Craft of Interior Decoration and Design, has recently extended its name to the *Incorporated Institute of British Decorators and Interior Designers.*

The syllabus of the Associateship Examinations has also been widened to include a special Examination for Students of the Craft desiring to qualify as Interior Designers.

For this purpose the Final Grade of the Examination has been divided into two parts, one for the Craftsman Decorator and the other for the Interior Designer.

Associateship of the Institute is conferred on those passing in either section of the Final Grade.

Full particulars of the Examinations and Conditions of Membership can be obtained from the Secretary, Incorporated Institute of British Decorators and Interior Designers, Drayton House, Gordon Street, London, W.C.1.

● The Duke of Devonshire has succeeded the Earl of Halifax as president of the Building Societies Association. Mr. Francis E. Lamb, J.P. (Bradford Equitable) succeeds Mr. Hubert Newton (Leek and Moorlands) as chairman; and Mr. Fred Bentley (Halifax) becomes deputy chairman.

● Mr. Keith N. Hillas, managing director of W. N. Hillas & Co., Ltd., Hull, was elected Chairman of the Timber Development Association at the Annual General Meeting of the Association held in the Dorchester Hotel, London, on May 18. He is Chairman of the Humber District Timber Trade Association.

Retiring Chairman was Mr. G. B. Crow, Managing Director of Beves & Co., Ltd., Shoreham, who held the office for two years.

● Mr. C. V. Miller has been appointed to the Board of Directors of Nu-way Heating Plants, Ltd., Droitwich, where for several years he has been sales manager.

● Mr. F. W. Joyce has been appointed manager of the Household Appliance and Domestic Equipment Department of the Liverpool Branch of the General Electric Co., Ltd., under the general managership of Mr. G. L. Butler.

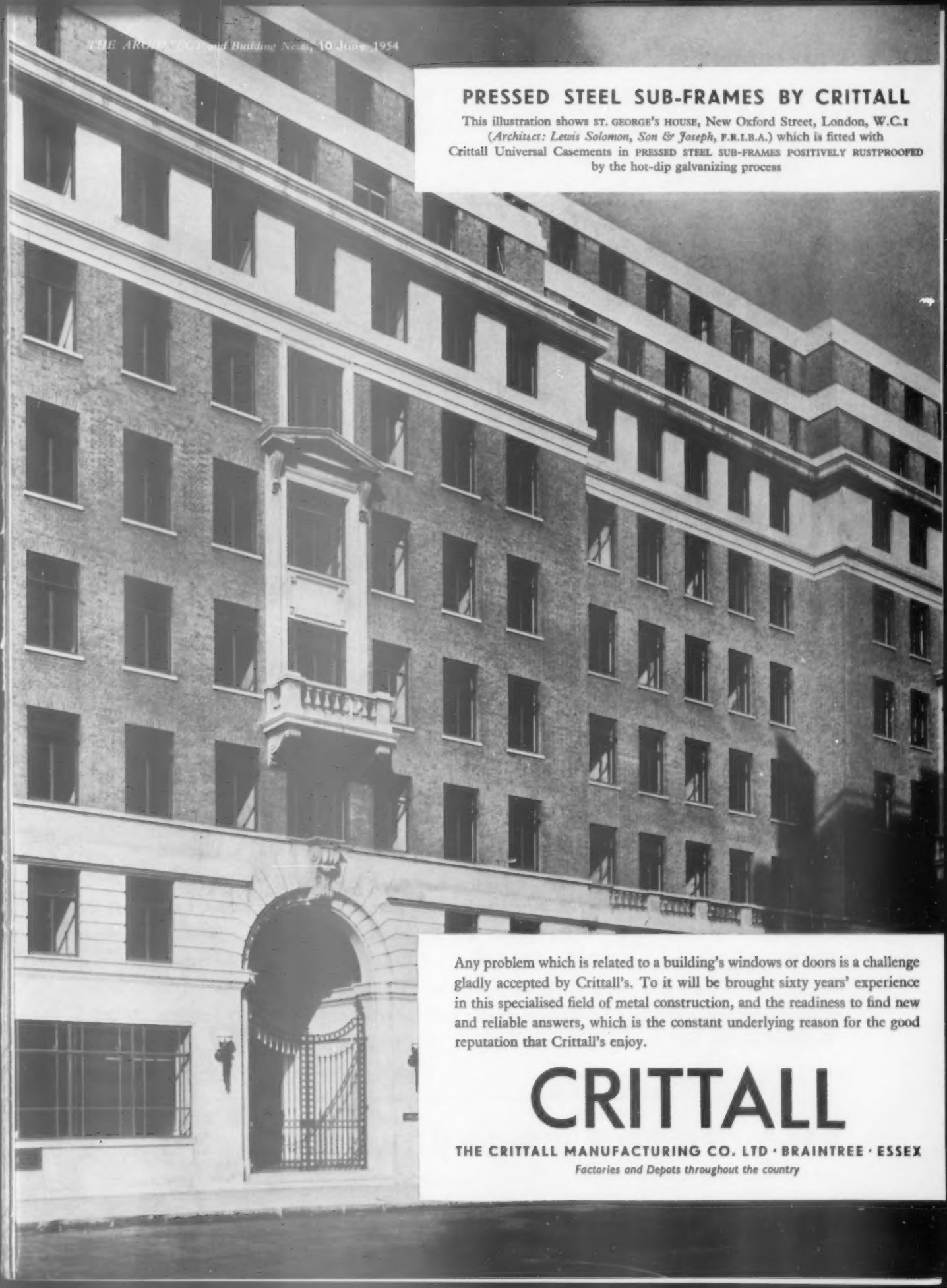
● For those exporters interested in the Canadian market, a revised edition of "Exporting to Canada," has been published by H.M. Stationery Office, price 3s, by post 3s 2½d. This booklet, which follows the same lines as the edition published in 1951, has been brought up to date and extensively rewritten.

"Exporting to Canada" contains chapters dealing with the characteristics of the Canadian market, initial steps to be taken in examining the market, selling and distribution, sales promotion, conduct of business, standards and specifications, Canadian Government regulations, and guarantees against export losses.

"Exporting to Canada" may be obtained from the sales offices of H.M. Stationery Office or from any bookseller.

PRESSED STEEL SUB-FRAMES BY CRITTALL

This illustration shows ST. GEORGE'S HOUSE, New Oxford Street, London, W.C.1 (*Architect: Lewis Solomon, Son & Joseph*, F.R.I.B.A.) which is fitted with Crittall Universal Casements in PRESSED STEEL SUB-FRAMES POSITIVELY RUSTPROOFED by the hot-dip galvanizing process



Any problem which is related to a building's windows or doors is a challenge gladly accepted by Crittall's. To it will be brought sixty years' experience in this specialised field of metal construction, and the readiness to find new and reliable answers, which is the constant underlying reason for the good reputation that Crittall's enjoy.

CRITTALL

THE CRITTALL MANUFACTURING CO. LTD · BRAINTREE · ESSEX

Factories and Depots throughout the country

New Hydrosulphite Building
Brotherton & Co. Ltd., Bromborough, Cheshire.
Architect: Victor Bain, F.R.I.B.A.

"INSULIGHT" HOLLOW GLASS BLOCKS WERE USED BECAUSE . . .

A high light level was required for this interior, and it has been achieved by the use of large panels of "INSULIGHT" Hollow Glass Blocks. They will have a far longer life than ordinary window panes of comparable size, which tend to deteriorate under the effect of the acid fumes in the air. Their good thermal insulation properties, and the fact that they are easy to clean are other important considerations.

Consult the Technical Sales and Service Department at St. Helens, Lancs., or Selwyn House, Cleveland Row, St. James's, London, S.W.1. Telephones: St. Helens 4001, Whitehall 5672-6.

PILKINGTON BROTHERS LIMITED

Supplies are available through the usual trade channels. "INSULIGHT" is the British registered trade mark of Pilkington Brothers Limited.

CURRENT MEASURED RATES (LONDON)

These apply to new work of normal character and some size. These rates are for time and materials only, and carry 10 per cent in excess, so the appropriate essential on-costs should be added. The basis cost of material used in the calculation of these prices is taken from the foregoing tables which carried up to 31st May, 1954.

[COPYRIGHT]

ESSENTIAL ON-COSTS

Fees payable to L.C.C. for District Surveyor :	
For new buildings of ordinary construction exceeding 5,000 cubic feet, for every 1,000 feet or part of same up to 1,000,000 cubic feet 1/6, together with an additional sum of £1/10/- ..	£1/10/- *at* + 1/6
After which allow per 1,000 do.	at + 9*d.*
For alterations and additions :	
When £100 the sum of £2/10/-, plus 12/6 for every £100 or part of same, up to £1,000 ..	£2/10/- *at* + 12/6 per 100
When over £1,000 the sum of £8/2/6, and for every £100 or part of same beyond 3/- ..	£8/2/6 *at* + 3/- per 100
Public buildings : Fees as above but plus 50% ..	+50%
Fees in respect of means of escape in case of fire are 1/5th of the above or £2 if greater or in the case of a one-storey building £1	1/5th
Steel framed or r.c. buildings double	+2

Allowance to cover National Insurances, Holidays with Pay and Public Holidays, Welfare, Third Party Risk, Travelling and Guaranteed Week is made in the rates attached to the items.

Allow for Fire Insurance do.	½%
Allow for Water for use on the works and apparatus do.	6/6%
Allow for hoarding, or similar licences in City of London	say £10
Do. under Borough Councils per ex month	say 2/6
Allow for Office, Fire, Attendance on C. or W. etc., p. week	say £1

Supervision, etc. assessment Contract value	£4,000	£6,000	£12,000	£24,000	£50,000
Cost of admin. ..	6%	5%	5%	4½%	4½%
Agent or foreman (each)	5%	4½%	3½%	2½%	1½%
Timekeeper or Watchman (each) ..	2½%	2¼%	1½%	1%	¾%

SPOT ITEMS AND DEMOLITION, ETC.

	Per foot run
Hoarding erected and removed	17/-
Planked gangway with handrail, etc. do.	9/-
Proper gantry do.	68/-
Sleeper roadways	14/6
Needling, strutting and shoring including all labours and use and waste in erection and removal ..	Per foot cube 17/-
Breaking up and removing hard masses of concrete or brickwork, etc., found in foundations	Per yard cube 58/-

ALTERATION-DEMOLITION—	1 Brick Per foot	1½ Brick super	2 Brick super	Per yard Cube
Cutting out cement concrete or brickwork in small quantities ..	1/3	2/4	3/2	57/-
Do. if either in very small quantities or reinforced	2/1	3/8	5/3½	84/-
Debris into baskets and removed from inside to outside of bldg.	3½*d.*	7*d.*	8½*d.*	12/2

SCAFFOLDING

Per Yard superficial	Period— 1 month	3 months	5 months
Putlog type—4′ 6″ lift	4/10	6/6	8/2
Do. —6′ 0″ do.	3/4	4/8	6/-
Independent type—4′ 6″ lift ..	6/2	8/9	11/3
Do. —6′ 0″ do.	4/2	5/9	7/5

EXCAVATION

Per Yard Cube. *By Hand*	Common Soil	Loam and Clay	Stiff Clay	Hard Gravel
Reduce levels	4/11	5/5	6/9	8/2
Surface trench	8/5	10/3	13/9	14/5
Barrow 25 yds.	2/6	3/4	3/9	2/6
Fill and ram	4/6	5/-	5/5	5/3
Load and cart	14/-	14/5	14/11	14/2
By machine				
Bulk dig and load	3/4	3/9	4/2	4/2
Lorry standing while loading and 5 miles travel to tip ..	5/6	6/1	7/4	6/9
1 extra mile to tip	7*d.*	8*d.*	8½*d.*	8*d.*

CONCRETE

1½in Ballast Aggregate	Per yard cube
1 : 3 : 6 Cement concrete in foundations	68/-
Do. around grillages	71/-

REINFORCED CONCRETE

1 : 2 : 4—¾in. concrete, worked around reinforcement, between formwork in the following (at various levels) :—

Foundations and surface beds	76/-	Per cubic
Walls, 12ins thick or more	81/-	Yard

Sectional inches.	Lintols and beams.	Columns and casings.	Braces and projections.
Up to 36	4/-	4/3	4/5 Per cubic ft.
36 to 72	3/9	4/1	3/10 do.
72 to 144	3/7	3/8	3/10 do.
over 144	3/5	3/7	3/9 do.
Walls 6ins thick			15/4 Per super yard
Do. 9ins thick			22/3 do.
Suspended floors average 6ins thick ..			16/2 do.

REINFORCING RODS (round) bent and placed— Per cwt	¼in	⅜in	½in	⅝ to 1in
In floors and beams ..	70/-	65/-	60/3	54/-
In walls	76/6	70/-	64/-	57/6
In columns	83/-	75/3	69/3	62/-

FORMWORK and Supports (4 times use)— Floor soffits	Beams.	Walls.	Columns.
17/7 per Yard.	2/5	2/1½	2/1½ per super foot.

BRICKWORK

BRICKWORK per YARD superficial reduced to ONE BRICK in thickness (scaffold to add)—	In 1 : 3 cement mortar.
Flettons or other similar *at* 113/- per 1,000 ..	37/4
Mild Stocks or do., *at* 218/6 per 1,000 ..	50/5
Second Stocks or do., *at* 249/6 per 1,000 ..	53/10
Southwater engineering or similar bricks, *at* 343/6 per 1,000	68/2
Blue Staffordshire wire cut *at* 454/- per 1,000 ..	80/-
Deduct if 1 : 1 : 6 Cement-Lime mortar is used in lieu of 1 : 3 Portland Cement mortar	2*d.*
Add if brickwork commences above ground level	3/9
Do. if in backing to masonry including cutting and waste for bonding	2/10
Do. If circular-on-plan	6/9
Do. If in underpinning	6/9

BRICKWORK IN THICKNESS NOT REDUCED— Per yard superficial.	Brick, on edge walls.	Half-Brick walls.	1 Brick finished fair both sides.	11″ Hollow with 2″ cavity and G.I. ties.
In Flettons or similar ..	16/-	20/6	37/9	43/3
In second stocks or do.	21/6	28/6	53/3	59/1
Add : for pointing as work proceeds, per side	1/6	1/8	1/6	1/6
Thicknessing to old walls, including cutting, toothing and bonding to same an average total thickness of ½ brick	53/- Fletton	62/6 Stock		Per yard super.
Do. all as last but an average total thickness of 1½ bricks ..	69/-	90/-		do.

WALLS BUILT IN SUPERIOR BRICKS—

In 1 : 3 Cement mortar, fair faced and pointed on both sides as the work proceeds :—	Half-Brick	One Brick	
In first quality Stocks at 265/6 ..	33/9	60/-	Per yard
In red facings at 280/-	33/5	59/6	super.
In bluepressed facings at 501/- ..	48/10	90/6	do.

GENERAL AND SUNDRY—

Cut tooth and bond new brickwork to old			4/3 per ft
Damp proof course, double slate, horizontal			3/- super.
Do., as last, but vertical			3/10 do.
Do., bitumen, Hessian base, do.			1/8 do.
Frames, bed and point in cement mortar, one side			4*d.* per ft. run
Window board of 6″×6″×⅞″ rounded on edge quarry tiles, bedded, pointed, cut and fitted			3/- do.
Terra cotta air bricks built in and pointed, including flue	9″×6″ 5/-		9″×9″ 9/- each.
Chimney pots, plain red, set and flaunched in cement mortar ..	1ft high 13/-		2ft high 19/- each
Metal windows, assembled, hoisted and fixed, lugs cut and pinned and frames bedded and pointed one side in cement mortar ..	Up to 5ft super. 10/9	10ft to 20ft super. 21/-	5ft to 10ft super. 13/6 each	20ft to 40ft super. 35/- each
Leaving holes through walls for pipes and afterwards making good	Small pipes 3*d.* per in in depth		Large pipes 6*d.* per in in depth	
Cutting do., and afterwards do. ..	10*d.* do.		1/8 do.	
Cut mortices in brickwork or concrete for bolts or dowels and run in with cement grout	1/1½ per in in depth, each			
Holdfasts of stout hoop iron bent holed and screwed to frame and built in ..	1/2 each			

MEASURED RATES—*Continued*

BRICKWORK—*Continued*

FACING—

Extra only over common brickwork (113/- per 1,000) for facing with superior bricks in *Flemish bond* and pointing as the work proceeds.

Rustic Flettons (138/-)	3/9 per yard super.
White (200/-)	8/4½ do.
First Stocks (270/6)	13/3 do.
Reds (279/-)	13/10 do.
Blue pressed (501/-)	30/10 do.

If built in English bond, *Add* 10% to above.
If do. half-brick stretcher bond, *Less* 25% off above.

COPING—

All labour and material in forming brick-on-edge coping with two courses of roofing tiles under and cement weather fillets on both sides, built in cement and pointed as the work proceeds.

Per foot run	9″ thick	14″ thick
In picked Flettons	6/1	8/2
In first quality Stocks	7/5	10/10
In red facings	7/3	10/8

Plumbing angles	2*d.* per foot run
Fair cutting	10½*d.* do.
Fair raking cutting	1/5 do.
Fair circular cutting	1/5 do.
Fair squint or birdsmouth	1/9 do.

ARCHES

Extra over Fletton brickwork for forming window head with red facing bricks set on end and with 4½″ soffits and pointing	foot run 3/6
Do. for rubbed and gauged flat arch in red rubbers set in putty with fine joints	foot super 17/6

PARTITIONS

(over 100 Yards)	Per yard super— 2in.	2½in.	3in.
Concrete slab partitions in cement mortar	9/9	11/-	13/10
Hollow clay do.	11/10	12/9	13/11

Cutting and bonding at angles, intersections and ends 4½*d.* foot run.

PAVING	1in.	1½in.	1½in.	
Grano trowelled gauged 5 : 2	8/-	9/8	11/6	yard super
1 × 5in skirting, square top and cove bottom			2/8	foot run
½in × 6in. red quarry tile paving			26/-	yard super
½in. × 6in. do. skirting			1/9	foot run
Jointless flooring, ¼in thick			20/-	yard super

ASPHALTE (normal conditions and fair quantity)

½in pitch mastic floor in one coat on felt underlay on prepared concrete base	B.S. 1450/48 Black	B.S. 1375/47 Brown	B.S. 1375/47 Red
Per yard super	11/10	13/2	15/-
	Unit	Mastic B.S.988	Natural Rock B.S.S. 1162/44
½in in two thicknesses on felt underlay on prepared concrete base	yard super	16/-	21/-
Ditto in narrow widths	foot super	2/6	3/-
½in skirting 6in high, angle fillet at bottom splayed and turned in at top	foot run	2/8	3/6
External angles	each	6*d.*	6*d.*
Internal *ditto*	each	10*d.*	10*d.*
Tanking or Damp Course		B.S.1097/43	B.S.1418/47
Vertical in two thicknesses	yard super	21/-	29/6
½in horizontal *ditto*	yard super	14/-	22/6
Vertical in three thicknesses	yard super	28/-	37/6
1½in horizontal *ditto*	yard super	19/6	30/6
Labour rounded external angle	per foot run	5*d.*	6*d.*
Ditto internal angle fillet	per foot run	10*d.*	11*d.*
Ditto double *ditto*	per foot run	1/6	1/6
Collars to small pipes	each	3/6	4/-
Ditto to large pipes	each	6/-	7/6

DRAINAGE

Per lineal yard		
Excavate trench, and plank and strut to sides, consolidate bottom to fall, return fill and ram earth after drain is laid, and load and remove surplus. In ordinary ground—moderately firm	1 foot in depth	4/2
	2 do.	7/2
	3 do.	17/7
	4 do.	23/4
	5 do.	29/1
	6 do.	36/11
	7 do.	45/-
	8 do.	57/-
	9 do.	66/1
	10 do.	73/4
	11 do.	91/3
	12 do.	102/6

Portland cement (1 : 6) concrete bed under drain pipes and benching up on both sides—6″ thick	Per yard run 4in 18in wide	6in 20in wide	9in 23in wide
	5/7	6/6	8/1½

SALT GLAZED SANITARY DRAIN PIPES
and lay and joint with Yarn and Cement Mortar in trench.

Quality	Quantity	Per foot run 4in	6in	9in
"Best"	2 Tons or more	2/6	3/7	6/-
	over 100 pieces	2/9	4/1	6/9
	under 100 ditto	2/10	4/3	7/3
"Best Tested"	2 Tons or more	3/1	4/5	7/7
	over 100 pieces	3/7	5/4	9/-
	under 100 ditto	3/10	5/7	9/6
"Bright Standard"	2 Tons or more	2/8	3/11	6/6
	over 100 pieces	3/1	4/5	7/7
	under 100 ditto	3/3	4/8	7/11
"British Standard Tested"	2 Tons or more	3/3	4/9	8/-
	over 100 pieces	4/1	6/-	10/5
	under 100 ditto	4/2	6/3	10/10
Extra for bends "Best"—Contained in 2 Ton lots.		3/10	5/7	15/8
Extra for junction "Best"—4in on 4in, 6in on 6in—9in on 9in.	ditto	6/-	8/9	25/6

IRON DRAIN PIPES—

	Per foot run 4in	6in
Heavy cast iron socketed and laying and jointing in molten lead—In main runs	11/-	14/9
In branches	11/10	16/- each
Extra over last for bends and extra joint	32/-	54/6
Do. on do. for junctions and extra joint	44/-	78/-
Cast iron gulley with 10½in inlet and 4in outlet, composed of hooper and trap, and 9in extension piece and 10½in grating, and jointing all together, and jointing to drain and surrounding in concrete	117/-	—
Do. rain water shoe with vertical inlet and inspection cover, and joint up and embed	54/-	107/-

MANHOLE SUNDRIES—		4in	6in
Salt glazed straight half-round main channels	each	5/-	7/-
Do. curved	do.	10/6	15/-
Do. three-quarter section splayed channel bends (Barrons or similar)	do.	13/9	19/10
Heavy manhole steps galvanized	do.	10/-	—
Fix only manhole covers	do.	10/-	—
4in Mica flap, brass faced, f a.i. valves and fix with molten lead joint	do.	34/-	—

ROOFER

CORRUGATED ASBESTOS SHEETS

P.C. 6/8½ per super yard, including side and end laps and fixing to wood	134/- per square
Eaves filler pieces	1/9 foot run
Adjustable ridge	3/4 do.
Barge boards	2/8 do.

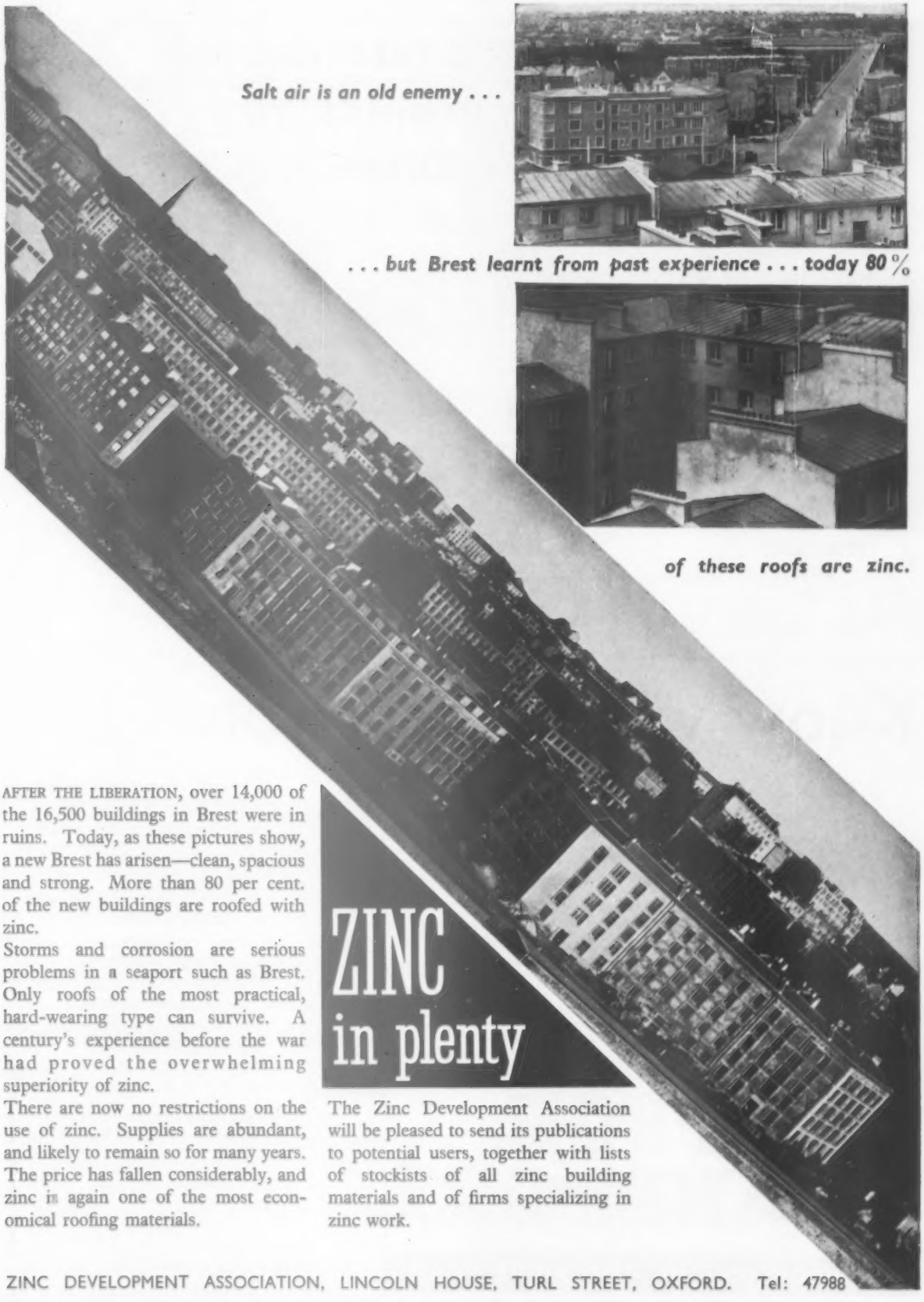
Plain roofing tiles, machine made, sand faced, 4in gauge nailed every 4th course with 1½in galvanized nails, to battens (measured separately) 226/- do.

Extra over last for top edge or abutment cutting	1/1½ do.
Do. for double course at eaves	2/0½ do.
Do. for verges, undercloak, bed and point	2/9 do.
Do. Valley tiles including cutting and waste on both sides	10/- do.
Do. Bonnet hips and do. bed and point	10/6 do.
Half-round ridge and bed and point	2/9 do.
Fixing soakers	1/4 dozen

Bituminous felt roofing in two layers, laid breaking joint and bedded with hot mastic and finished with fine dry grit	10/6 yard super.
Do. but in one layer only	7/9 yard super.

WELSH SLATING— 3in lap, 2 zinc nails to each slate	Per square 12″ × 10″	18″ × 10″	20″ × 10″
	261/6	308/-	337/-

Additional labours—	Per foot lineal 1/4in	1/6in	1/8in
At tops, verges and abutments—straight	1/4	1/6	1/8
Do. —raking	2/-	2/3	2/6
At hips and valleys (each side)	2/-	2/3	2/6
At eaves, double course	2/8	3/1	3/4
Do. to falls	4/-	4/2	5/1



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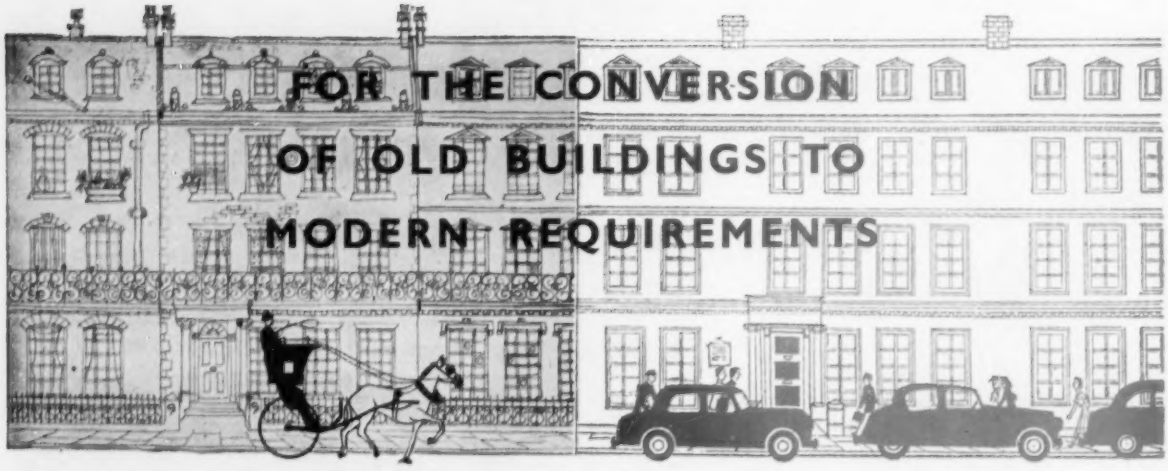

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MEASURED RATES—*Continued*

FLOORS AND FLATS

Hollow tile in situ or precast units hoisted, bedded and fixed—

Superimposed load in lb per foot super	Span 12 feet	Span 16 feet
Per yard super. 50 ..	43/–	48/9
100 ..	44/3	51/3
150 ..	48/–	54/6

20lb has been allowed to cover dead load in surface finish.

Fair edge to slabs .. .. 9*d.* per foot run

Splay cutting and waste .. .. .. 1/8 do.

CARPENTER AND JOINER

SOFTWOOD CARCASSING— per foot cube—

	Plates	Joists	Rafters	Trusses
Labour, materials, waste nails, hoisting and fixing ..	17/10	18/10	20/5	22/6

FLOORING— Per square—	⅝in	1in	1½in
Rough boarding	130/–	159/6	196/6
Softwood batten flooring, straight joints, splayed headings	130/–	159/6	196/6
Do. grooved and tongued	153/–	183/–	226/–

SKIRTING— Per foot superficial—	½in	⅝in	1in
Wrot softwood moulded skirting with grounds and backings plugged ..	3/3	3/10	4/5

Mitres to do. .. 3*d.* per sectional inch.

Fitted ends .. 2*d.* do.

SASHES, Fanlights, casements, borrowed lights, etc.—

Per foot super—	Without bars	With bars (2ft sup. in each square)
2in softwood rebated, moulded and fixed	2/11	5/–
Add if fitted with beads	6*d.*	1/6
Add if hanging on butts	2/1 each	

WINDOWS, hung on lines—

Softwood cased frames, 1in inner and outer linings, 1½in pulley stiles, 2in sashes, oak sill.

Per foot super.	Overall size of frames— 6ft	21ft	32ft	44ft
Window as described	16/10	9/2	7/1	5/7
Add if sashes in squares, about 2 feet super in each	—	1/4½	1/8½	1/7½
Extra for hanging sashes with lines, weights and axle pulleys	each 27/–	44/6	55/–	74/–

FINISHINGS TO OPENINGS— Per foot super—

	⅝in	1in	1½in	1½in
Softwood linings, tongued at angles and tongued to frame including grounds and backings	3/4	3/10	4/7	5/2
Add if crosstongued	6*d.*	6*d.*	6*d.*	6*d.*
Softwood wrot rounded on front edge and with tongue at back window board including groove in sill and bearers	3/3	3/8	4/6	5/–
Add for ends to last notched, returned and rounded	1/–	1/1	1/2	1/3

Per foot run— Sectional area in inches—	1	2	3	4	5	6
Softwood wrot and fixed in bearers, backings, grounds, fillets, and similar	3½*d.*	6*d.*	8½*d.*	10½*d.*	1/1	1/3
Add if in short lengths ..	2*d.*	2*d.*	2½*d.*	2½*d.*	3*d.*	3*d.*
„ if plugged to brickwork	4*d.*	4*d.*	4*d.*	4*d.*	4*d.*	4*d.*
„ if framed as in legs and bearers	3*d.*	3*d.*	4*d.*	4*d.*	6*d.*	6*d.*
„ if rebated or grooved or beaded	½*d.*	½*d.*	½*d.*	½*d.*	½*d.*	½*d.*
„ if chamfered or rounded edges				1½*d.*		
„ if moulded in architraves, capping, etc.				3*d.*		

DOOR FRAMES— Per foot run—

Per sectional inch—	6in	8in	10in	12in	13½in
Softwood, wrot, rebated, rounded framed and fixed	2/–	2/4	2/10	3/2	3/4

DOORS—Per foot super. Number of panels—

	1	2	3	4	5	6
2in Softwood, square framed and flat panels, both sides, on butts ..	5/4	6/4	6/10	7/6	7/9	8/6
1½in do.	4/6	5/4	5/10	6/4	6/7	7/1
Add for each side moulded	4*d.*	5*d.*	6*d.*	7*d.*	8*d.*	9*d.*
Add for do. flush panelled ..	8*d.*	8*d.*	8*d.*	6*d.*	7*d.*	7*d.*

per foot super—	⅝in	1in	1½in	1½in
In shelves, table tops, wrot and fixed	2/3	2/6	2/11	3/5
Do. in divisions and ends framed ..	2/5½	2/8½	3/1½	3/9½
Add if crosstongued	6*d.*	6*d.*	6*d.*	6*d.*
Add if buttoned	6*d.*	6*d.*	6*d.*	6*d.*

SUNDRIES—Per foot run	In short lengths	In long lengths	Add for cups & screws
Glazing beads, mitred around and fixed with brads ..	6*d.*	4*d.*	2*d.*
Rounded heel or hollow ..		4*d.*	
Tongued and grooved angle		6*d.*	
Glue blocking		6*d.*	
Mitres	3*d.*	per sectional inch.	
Fitted ends	2*d.*	do.	

STAIRCASE— Per ft Super

1½in Softwood treads with moulded nosings. 1in risers tongued both edges and glued, blocked and bracketed on and including two fir framed carriages	5/–
Do. but in winders	6/2
1½in crosstongued landing on framed carriages ..	5/–
2in moulded string	4/10
2in do. ramped	11/2
Ends framed to newel	9/– each
Tongued and mitred angles	4/11 do.
Tongued heading joints	4/11 do.
Ends of treads and risers housed to string ..	3/6 do.
Extra for curtail ends to steps, glued up and veneered riser and solid blocking	95/– do.

Balusters about 2ft 9in long, square and framed each end .. .. .. each	1in 3/5	1½in 4/–	1½in 4/6
3½in × 3½in square newel, framed	3/9 per foot run		
African mahogany moulded 3in × 2in handrail. (Joints below)	8/–	do.	
Do. ramped 18in girth (do.)	49/–	each	
Do. wreathed do. (do.)	146/–	each	
Joint or framed ends	10/6	each	

FIXING ONLY IRONMONGERY	To deal	To hardwood
Barrel bolts	1/6	2/3 each
Flush bolts	3/8	4/6 do.
Sash fasteners	2/1	2/8 do.
Rim locks and furniture	5/–	6/3 do.
Mortice locks and do.	10/–	15/6 do.
Cupboard locks	2/7	3/2 do.
Casement fasteners	2/1	2/7 do.
Do. stays	2/1	2/7 do.
Grip handles	2/5	3/2 do.
Spring catches	2/1	2/7 do.
Cabin hooks	1/8	2/3 do.
Floor springs including oil	44/–	55/– do.
Overhead springs	12/8	15/– do.
Springhinges	10/–	12/– do.

SMITH AND FOUNDER

Basis framed steel joists and hoist and fix ..	70/– per cwt.
Do. but in compound girders	74/– do.
Do. but in stanchions	84/– do.
Trusses	97/– do.
Additional cost per cwt. over basic sections for following R.S.J.s.	
9in × 7in .. 3½*d.* per cwt. 6in × 3in .. 4½*d.* per cwt.	
5in × 3in, 10in × 8in, 12in × 8in, 14in × 8in, 16in × 8in, 18in × 6in, 18in × 7in, 20in × 6½in, 20in × 7½in	6½*d.* do.
5in × 2½in, 22in × 7in	10*d.* do.
4in × 3in, 24in × 7½in	1/1½ do.
3in × 3in .. 1/4½ cwt. .. 4½in × 1½in ..	2/9 do.
3in × 1½in	3/10½ do.
Bolts and nuts, fitted	150/– do.
Forged straps	108/– do.
Wrot iron balustrade	130/– do.

RAINWATER GOODS—

	Per	foot	lineal
Round cast-iron pipe with socketed joints caulked with red lead and tow and fixing with pipe nails and gas barrel distance pieces to plugs in brickwork	2in 3/4	3in 3/10	4in 5/–
Extra for shoes .. .. .. each	4/11	6/2	8/10
Do. junctions .. .. .. do.	7/3	9/3	13/5
Do. bends .. .. .. do.	5/8	7/3	9/4

RAINWATER GUTTERS Per foot run—	4in	5in	6in
Half round C.I. gutters jointed in red lead and bolted and fixed on iron brackets	3/2	3/10	4/10
Ogee do. All as last	3/6	4/–	5/1
Extra for stop ends	2/11	3/7	3/10
Do. angles or outlets	5/2	6/7	7/9

MEASURED RATES—*Continued*

PLUMBER

EXTERNAL—		Soakers	Flats	Flashings
4lb Milled Sheet lead per cwt.		167/–	200/–	209/–

Per foot run		½in	¾in	1in	1¼in	1½in	2in
Lead main pipe	..	5/5	7/6½	10/–	12/11	16/4	21/9
Ditto service *ditto*	..	5/2	6/7	8/6	10/8	13/1	17/3
Ditto waste *ditto*	..	3/10	4/9	5/11	8/10	10/5	12/10
Bends	each	—	—	—	1/9	3/–	8/–
Solder joints	„	8/–	9/9	11/6	13/6	16/–	20/–
Union and joints	„	12/10	16/5	21/1	28/1	—	—
Stop valve and *ditto*	„	28/11	37/7	51/10	80/9	—	—
Bib valve and *ditto*	„	20/8	28/–	—	—	—	—
Ball valve and *ditto*	„	22/6	31/7	49/5	71/11	—	—
Sleeve and *ditto*	„	—	—	—	—	21/3	28/9

COPPER TUBES		½in	¾in	1in	1¼in	1½in	2in
Tubes per foot run	..	2/7	3/2	4/1	4/9	5/6	8/1
Couplings: straight each	.. ..	3/1	3/10	5/8½	7/5	9/6	12/11
Do. Bends each	..	6/–	7/2	10/2	13/8	20/6	28/3
Do. Tees „	..	7/2	8/4	12/2	16/6	22/3	31/1
Do. Cistern „	..	4/–	5/3½	7/–	8/11	12/4	16/2
Stop cocks „	..	23/10	33/6	52/9	93/–	138/–	213/–

BLACK TUBING (Class C) fixed with pipe brackets	½in	¾in	1in	1¼in	1½in	2in
Tubes, per foot run ..	1/9	2/1	2/7	3/3	3/10	5/1
Bends and fix, each ..	3/10	4/7	5/7	7/3	8/2	12/8
Tees and *ditto* ..	4/–	4/9	5/9	7/5	9/–	13/4
Fire bends	1/5	1/9	1/10	2/1	2/9	4/10

Coated iron (M) weight L.C.C. soil and waste fixed with nails and distance pieces and molten lead joints	2in	4in	
.. ..	4/8	6/10	foot run
Extra only for bends and joint	12/7	20/9	each
Do. junctions and joints	14/–	26/–	do.
Do. cleaning doors	14/4	15/8	do.
Domical wire guards	2/6	2/9	do.

PLASTERER—			yard super
Lime and hair	¾″	Render and set	6/–
Do.	½″	Ditto float and set	7/6
Sirapite	¼″	Skimming coat	3/8
Do.	½″	Render and set	7/4
Do.	¼″	Render float and ditto ..	9/–
Portland	½″	Backing coat	4/2
Do.	¼″	Plain face	7/4
Do.	¼″	Floor screed	4/6
Keenes	¼″	Skimming coat	4/9
Dubbing	½″	Thick or less	2/–
Metal lathing	¾″	mesh × 24 Gauge	5/6

6″ × 6″ × ¼″ Earthenware Plain Glazed Tiles, in fair quantity, white, and setting (on prepared screed) .. 38/–
Rounded edge. Extra over last .. 4d. per foot run.
Angles in ditto .. .. .. 4d. each
Cutting and fitting. Around pipes or clips 1/– ditto
Narrow widths. 3″ to 6″ wide. Add 75% to plain surface.
Ditto. 6″ to 12″ ditto. Add 40% to plain surface.
Sundry labours per foot linear :—
Quirk 2½d. Arris 3½d. Fair edge 2½d. Rounded edge 4d.
Flush bead 1/5.
Mouldings—5d. per inch girth.
Jointing new plastering to old 3d.

POLISHING

NEW WORK—	Foot super	Sashwork Foot run
Staining, bodying-in and French Polish	2/6	1/7
Staining and wax polishing on hardwood	1/1	9*d.*
OLD WORK—		
Cleaning down old work and repolish ..	1/–	—
Stripping, preparing and repolishing ..	2/9	1/11

INTERNAL PAINTING

With white lead base in common colours, with brushes.

	Knot stop and prime	Prime and paint once	Prime and paint twice	Add for each extra coat	
ON WOOD—					
General surfaces..	2/5½	4/9	6/6	1/9½	Yard super
Running lengths not exceeding 3″ wide	3½*d.*	7*d.*	9½*d.*	2¾*d.*	Yard run
Do. 3″ to 6″ wide ..	5*d.*	9½*d.*	1/0½*d.*	3½*d.*	do.
Do. 6″ to 9″ wide ..	7½*d.*	1/2½	1/7½	6*d.*	do.
Do. 9″ to 12″ wide ..	10½*d.*	1/6½	2/1	7*d.*	do.
Sash square each side	5/–	8/9	11/6	3/–	per doz.
Do. in large squares	7/3	12/3	16/8	4/4	do.
Opening edges ..	7*d.*	1/2	1/9	7*d.*	each
Casement frames each side	4½*d.*	8½*d.*	1/–	3*d.*	Yard run
Mullions or transoms, do. ..	6½*d.*	11½*d.*	1/3	4½*d.*	do.

ON PLASTER	One coat	Two coats	Three coats	
Paint on surfaces	2/7	4/11	6/8	Per Yard super
Do. on mouldings	3/–	5/6	7/4	do.
Do. on enrichment.. ..	4/7	8/8	11/3	do.
ON STEEL—				
Paint on structural steel ..	2/–	3/10	5/5	do.
Do. on roof trusses.. ..	3/4	6/6	8/11	do.
Do. on metal windows measured over all on both sides, divided into squares	3/1	5/3	7/5	do.
Do. divided into large squares	2/7½	4/6	5/10½	do.
Do. divided into extra large squares	2/2½	3/9	5/–	do.
Do. on opening edges ..	9½*d.*	1/5½	1/11	each
Do. on rain water pipe ..	9*d.*	1/6	2/–	Yard run
Do. on do. gutter	1/2	2/6	3/5	do.
Do. on small pipe	3*d.*	6*d.*	9*d.*	do.

GLAZING (to New Work)

Polished Plate Glass ordinary substance (about ¼in), glazing quality, in the following sizes, glazed complete— Per foot super

In plates not exceeding 2 feet super in each ..			4/10
Do.	5 feet	do. ..	5/8
Do.	45 feet	do. ..	6/4
Do.	100 feet	do. ..	6/9

Add extra price for glazing with screw beads or clips 3*d.* per foot super.
Do. if glazing bedded in washleather or velvet 6*d.* per foot run.

SHEET GLASS glazed, complete, per foot super, in new work :	24 oz	26 oz	32 oz
Ordinary quality clear glazed to wood with putty in areas of 100 feet super in the aggregate ..	1/9½	1/11½	2/2½
Do. 200 feet do.	1/8	1/10	2/1
Do. 500 feet do.	1/6½	1/8½	1/11½

Figured rolled and Cathedral, glazed to wood with putty in 100 foot super areas in aggregate. (White.) (¼in.)

	Per foot super	
Do. in standard tints	do.	2/7½
Fluted, glazed do.	do.	2/4½
Reeded (narrow, broad, etc.) do. ..	do.	2/4
Reedlyte do.	do.	2/4
Spotlyte do.	do.	2/3
¼in Rough cast do.	do.	2/2½
¼in Do. wired do.	do.	2/6
¼in Georgian Rough Cast do. ..	do.	2/5½

Add for glazing all as before but to steel to similar work as above, 2*d.* per superficial foot.

PAINTER AND DECORATOR

DISTEMPERING—In common colours, put on with brushes—

ON PREPARED SURFACE. per yard super—	1 coat (finish)	2 coats (undercoat and finish)	*Add* if required for Sealing coat	Stippling
Ordinary distemper on flat surface of plaster	8*d.*	1/3	5½*d.*	2*d.*
Washable do. on do. of plaster	10½*d.*	1/8½	5*d.*	2*d.*
Add if in margins, narrow widths or panels	30%	30%	20%	50%
Add if on mouldings	50%	50%	45%	—
Add if on enrichments ..	160%	160%	115%	—

PAPERHANGING

Hanging only—	Per piece—	Lining	Pattern
On walls		6/6	7/9
On Stairs		8/10	10/4
On ceilings		7/9	9/1

CONTRACT • NEWS •

Notes below give basic data of contracts open under locality and authority which are in bold type. References indicate: (a) type of work, (b) address for application. Where no town is stated in the address it is the same as the locality given in the heading, (c) deposit, (d) last date for application, (e) last date and time for submission of tenders. Full details of contracts marked ★ are given in the advertisement section.

OPEN

BUILDING

BATH C.C. (a) Adaptation and redecoration of former Walcot Junior Boys' School. (b) Education Surveyor, 23a, High Street. (c) 2gns. (e) June 19.

* * *

BICESTER U.C. (a) Erection of houses at Buckingham Road No. 1 site, consisting of 2 pairs, 1 block of 10 and 1 block of 6. Tenders for (1) whole 20 houses, or (2) the block of 6 houses. (b) Messrs. W. Smith and Son, 29, George Street, Oxford. (c) 2gns. (e) June 21.

* * *

BIDDULPH U.C. (a) 6 shops with flats over, Park Lane Estate. (b) Clerk of the Council, Council Offices, Biddulph, Stoke-on-Trent. (c) 3gns. (d) June 14. (e) July 12.

* * *

CAERPHILLY U.C. (a) 100 houses, Penyrheol Estate. (b) Engineer and Surveyor, Council Offices. (c) 5gns. (d) June 12. (e) June 28.

* * *

CRAWLEY DEVELOPMENT CORPORATION. (a) 7 shops with 7 maisonettes over and 1 shop with 2 flats over; 2 single-storey shops and 12 garages; 1 block of 6 flats with 3 houses adjoining; Pound Hill Neighbourhood Centre. (b) Chief Architect, Crawley Development Committee, Broadfield, Crawley. (d) June 15.

* * *

DOWNHAM MARKET U.C. (a) 8 houses, etc., Retreat Estate. (b) Messrs. J. Owen Bond and Son, St. Faith's House, Mountergate, Norwich. (e) June 19.

* * *

ENFIELD U.C. (a) 66 3-storey flats, London Road, at junction of Lincoln Road. (b) Engineer and Surveyor, 7, Little Park Gardens. (c) 2gns. (d) June 17. (e) July 7.

* * *

EPSOM AND EWELL B.C. (a) 28 dwellings, Holman Road, West Ewell. (b) Borough Engineer, Town Hall, Epsom. (c) 3gns. (e) June 28.

* * *

LONG EATON U.C. (a) (1) 38 houses; (2) 14 garages in 2 blocks of 6 and 8, Petersham Road Housing Estate. (b) Engineer and Surveyor, Town Hall. (e) July 2.

* * *

NEWCASTLE UPON TYNE C.C. (a) 14 houses for police personnel, Bentinck Road, Newcastle upon Tyne. (b) City Architect, 18, Cloth Market, 1. (e) July 2.

* * *

NORTHERN IRELAND HOSPITALS AUTHORITY. (a) Boilerhouse at Braid Valley and Waveney Hospitals, Ballyment. (b) Messrs. Thomas T. Houston and Co., 26, College Gardens, Belfast. (c) £5. (e) June 24.

* * *

SALFORD C.C. (a) 8 shops, 14 flats and 8 maisonettes, Bury Street, Salford, 3. (b) City Engineer, Town Hall, 3. (c) 3gns. (e) July 9.

* * *

SKIPTON U.C. (a) 24 bungalows, Horse Close Estate. (b) Engineer and Surveyor, Town Hall. (c) 2gns. (e) June 28.

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SODBURY R.C. (a) Erection of houses and reconstruction of paths and storm-water drainage in following parishes:—(1) 24 houses, Harcombe Road, Winterbourne; (2) 22 houses, Hillesley, Hawkesbury; (3) reconstruction of paths and storm-water drainage to Council houses, Mordell Close, Yate. (b) Council's Surveyor, Council Offices, Chipping Sodbury. (e) June 21.

* * *

SCOTLAND—EDINBURGH C.C. (a) 40 houses in 1 contract as follows:—(28 houses, Restalrig Avenue and 12 houses, Fillyside Gardens). (b) City Architect, City Chambers. (e) June 18.

* * *

SCOTLAND—EDINBURGH C.C. (a) Erection of following houses at Clermiston housing development, each contract forming a separate undertaking:—Contract No. 4.—130 houses; Contract No. 5.—139 houses and 8 shops. (b) City Architect, City Chambers. (e) June 18.

* * *

SOMERSET C.C. (a) 8-classroom extension at Weston-super-Mare Grammar School. (b) Chief Education Officer, County Education Office, Trull Road, Taunton. (c) 2gns. (d) June 12.

* * *

STROOD R.C. (a) Aged persons' bungalows as follows:—4 bungalows, Greenfields, Wainscott; 8 bungalows, Villa Road, Higham. (b) Engineer and Surveyor, Council Offices, Frindsbury Hill. (c) 5gns. (e) June 23.

* * *

TYNEMOUTH B.C. (a) 216 dwellings in pairs and blocks at Chirton Grange North, North Shields, in contracts as follows:—(1) 16 houses, (2) 15 houses, (3) 32 houses, (4) 36 flats, (5) 37 houses, (6) 38 houses, (7) 42 houses. (b) Borough Surveyor, 16, Northumberland Square, North Shields. (c) 2gns each contract. (e) June 28.

* * *

WAYLAND R.C. (a) 28 houses, outbuildings, block of 6 garages, drainage and site works, Attleborough. (b) Council's Surveyor, Council Offices, Attleborough. (c) 2gns. (e) June 18.

* * *

WITHERNSEA U.C. (a) 8 old people's bungalows, Highfield Estate. (b) W. G. Wilson, 16, Bishop Lane, Hull. (c) 3gns. (e) June 21.

* * *

WORCESTER C.C. (a) 8 maisonettes and 8 flats and 6 shops and 6 maisonettes, Dines Green Estate. (b) City Engineer, 22, Bridge Street. (c) 2gns. (e) June 24.

* * *

WORTHING B.C. (a) Alterations and additions to Assembly Hall. (b) Borough Engineer, Town Hall. (d) June 15.

PLACED

Notes on contracts placed state locality and authority in bold type with (1) type of work, (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.

TYNEMOUTH B.C. (1) Reconstruction of Fish Quay. (2) North Shields. (3) Brims and Co., Ltd., Pandon Buildings, Newcastle on Tyne. (4) £116,529.

* * *

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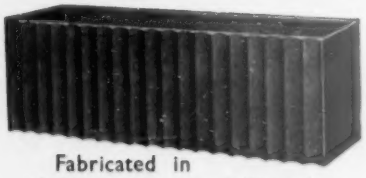

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BRITISH ELECTRICTY AUTHORITY. (1) Foundations, river works, etc., at South Denes power station. (2) Great Yarmouth. (3) Peter Lind and Co., Ltd., Romney House, Marsham Street, London, S.W.1. (4) About £1,000,000. (1) Site and foundation works at Stella West sub-station. (2) Newcastle on Tyne. (3) Sir Robert McAlpine and Sons (Newcastle on Tyne), Ltd. (1) Main civil engineering works at Ocker Hill power station. (2) Tipton, Staffs. (3) The Leamoore Construction Co., Ltd., Walsall, Staffs.

* * *

SHEFFIELD CITY COUNCIL. (1) 132 flats in blocks. (2) Greenhill site. (3) Direct Labour Organization. (4) £185,068.

* * *

HEREFORD CORPORATION. (1) 76 houses and 22 houses. (2) Tupsley Estate and Golden Post. (3) John Williams and Co., Ltd. (4) £104,619 and £29,922.

* * *

LONDON COUNTY COUNCIL. (1) Blocks of flats. (2) Devons Estate. (3) Stewart and Partners, Ltd., 105, Baker Street, London, W.1. (4) £162,426.

* * *

PRUDHOE U.D.C. (1) 105 houses. (2) West Wylam. (3) E. Jeffcock (Contractors), Ltd., New Bridge Street, Newcastle on Tyne.

* * *

LANCASHIRE COUNTY COUNCIL. (1) First phase of extensions. (2) Royal Technical College, Salford. (3) J. Turner and Sons (Preston), Ltd., William Henry Street, Preston. (4) £300,399.

* * *

BRITISH TRANSPORT COMMISSION. (1) Reinforced concrete jetty. (2) Goole, Yorks. (3) Peter Lind and Co., Ltd., Romney House, Marsham Street, London, S.W.1. (4) £175,000.

* * *

CHESHIRE C.C. (1) Schools. (2) Hartford and Weaverham. (3) Tysons (Contractors), Ltd., Dryden Street, Liverpool, 5. (4) £135,900 and £135,898 respectively.

* * *

ISLE OF ELY C.C. (1) Divisional Police headquarters and courts. (2) Wisbech. (3) J. T. Cox and Sons (Builders), Ltd., of March, Isle-of-Ely. (4) £93,483.

* * *

SUNBURY-ON-THAMES. (1) 40 houses, 6 bungalows, etc. (2) Ashford Common. (3) Telling and Son (Builders), Ltd., 79, Thames Street, Sunbury-on-Thames. (4) £72,504.

* * *

CHARD, SOM. (1) Factory for John C. Small and Tidmas, Ltd. (2) Perry Street. (3) R. G. Spiller, Ltd., Chard, Som. (4) £50,000.

* * *

ISLE OF ELY C.C. (1) High School. (2) Ely. (3) H. J. Firman, Ltd., 62, Oxney Road, Peterborough. (4) £121,103. (1) First phase of College of Further Education. (2) Wisbech. (3) Bettles Building Co., 80, Alma Road, Peterborough. (4) £73,414.

* * *

DARTFORD B.C. (1) 62 houses, 24 flats. (2) Temple Hill. (3) Peak Construction Co., Ltd., Knight Road, Strood, Kent. (4) £105,332.

* * *

ESSEX. (1) Erection of Sir John Fisher R.C. School. (2) Debden. (3) Whyatt (Builders), Ltd., 255, Streatham High Road, London, S.W.16. (4) £55,163.

* * *

HARLOW DEVELOPMENT CORPORATION. (1) Three intermediate factories. (2) Industrial Estate, Harlow. (3) Geo. Wimpey and Co., Ltd., Hammersmith, W.6. (4) £59,926.

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* * *

DOVERCOURT, ESSEX. (1) R.C. church. (2) Fronks Road. (3) Fisher and Woods, Elmhurst Road, Dovercourt. (4) £15,300.

* * *

NORTHAMPTON B.C. (1) First stage of technical high school. (2) Trinity Avenue. (3) A. Roberts and Co., Ltd., 79, Eccleston Square, Westminster, S.W.1. (4) £59,200.

* * *

TUNBRIDGE WELLS B.C. (1) 26 dwellings. (2) Sherwood Estate. (3) Perryman (Building Contractors), Ltd., 7, Castle Street, Tonbridge, Kent. (4) £33,706.

* * *

LOUGHBOROUGH B.C. (1) 24 flats, 2 houses. (2) Blackbrook Road. (3) F. R. Roper and Co., Byron House, Loughborough. (4) £27,950.

* * *

PLYMOUTH. (1) Factory. (2) Prince Rock. (3) Staverton Builders, Ltd., Totnes, Devon.

* * *

HUYTON-WITH-ROBY U.D.C. (1) 72 houses. (2) St. John's Road. (3) Albert Bros., Ltd., 29, Tynwald Hill, Liverpool, 13. (4) £86,086.

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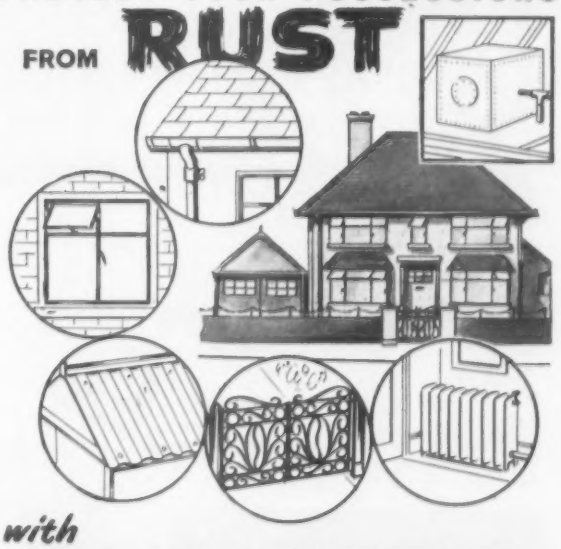

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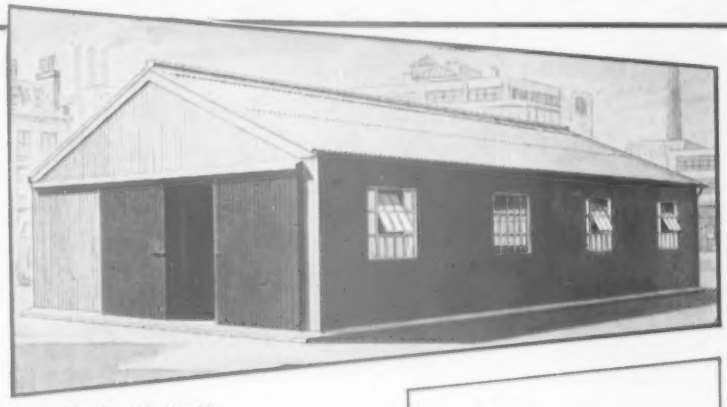

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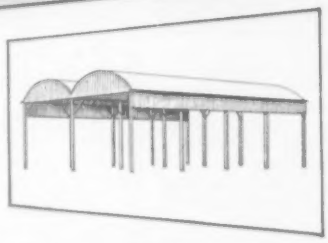

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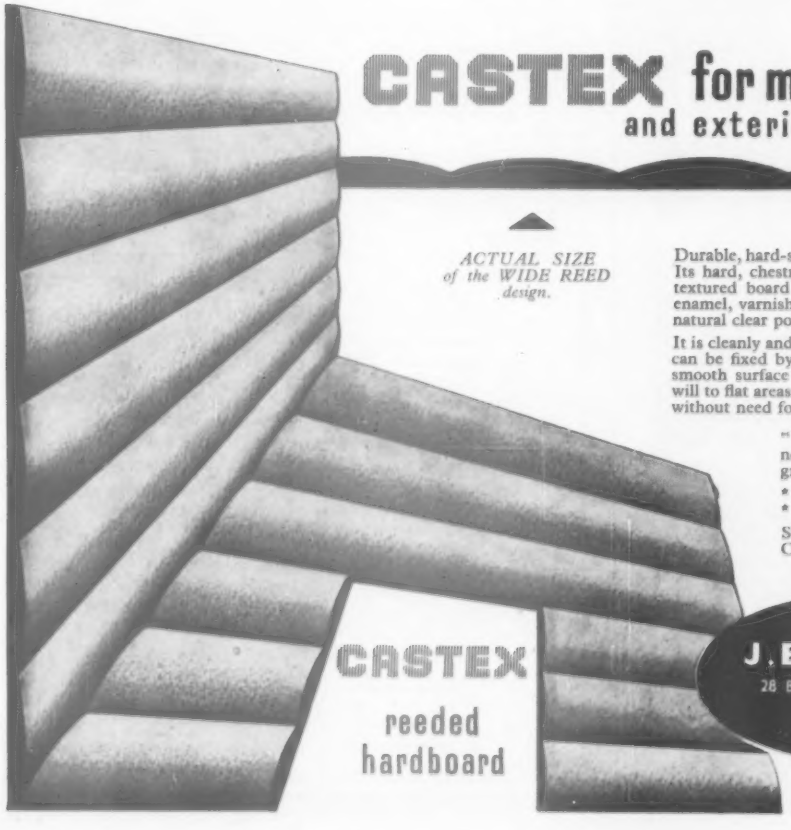

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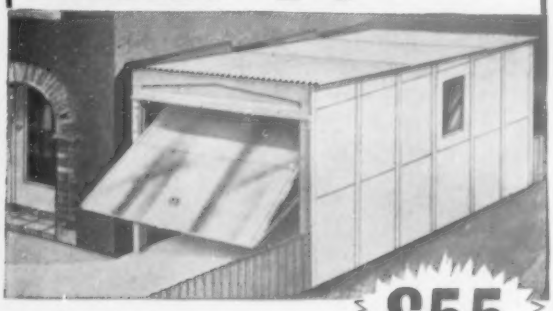

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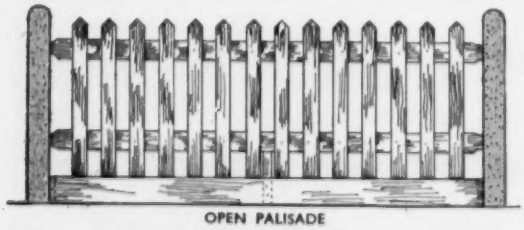

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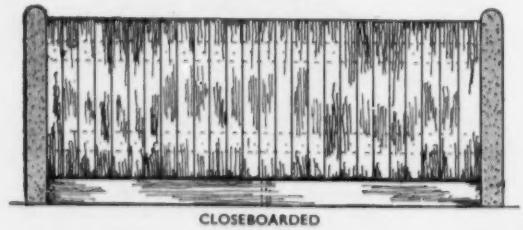

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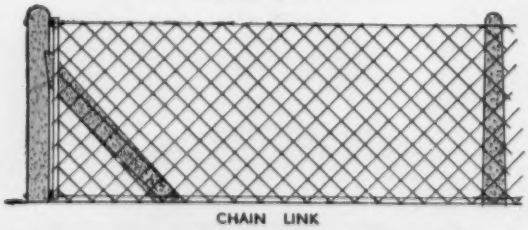

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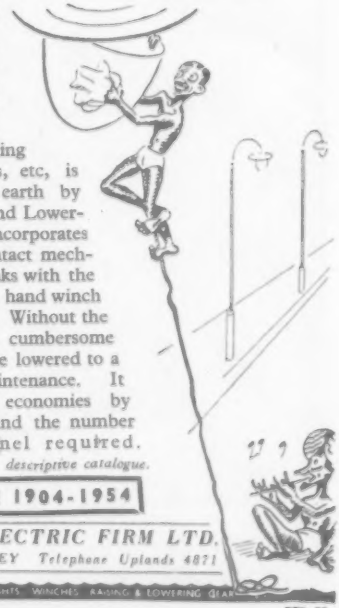

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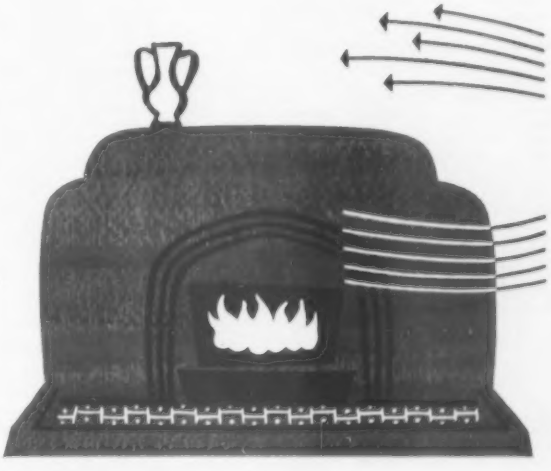

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Application forms may be obtained from the Secretary, Civil Service Commission, Stormont, Belfast, and should be returned with copies of two recent testimonials so as to reach him not later than 5th July, 1954. [8022

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Municipal Buildings,
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APPOINTMENTS—contd.

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GRADE A.P.T. VA.

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The Council is unable to assist with housing.

Full details and form of application may be obtained from the Borough Engineer and Surveyor, Town Hall, Dyne Road, Kilburn, London, N.W.6, and should be returned to the undersigned not later than 10 a.m. on Monday, 28th June, 1954.

(sgd.) R. S. FORSTER,
Town Clerk.

Town Hall,
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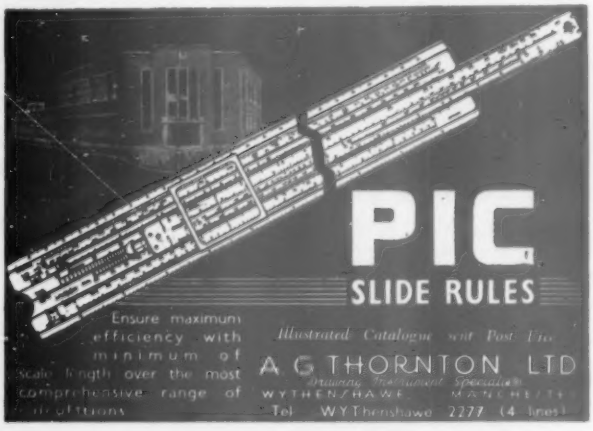
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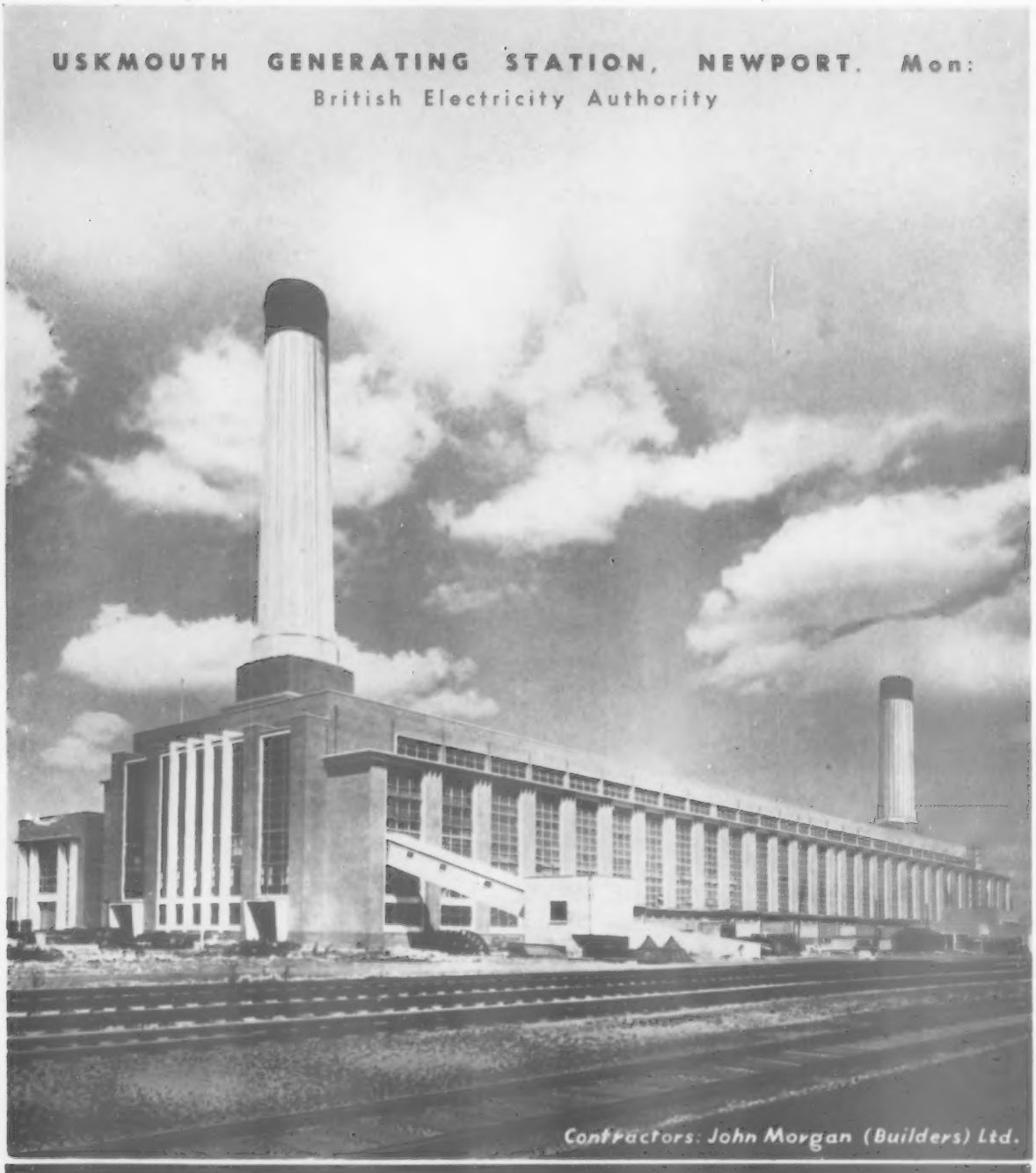

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